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Original Articles

INTERNAL HYDROCEPHALUS

WITH REPORT OF TWO CASES, ONE RESULTING FROM OCCLUSION OF THE AQUEDUCT OF SYLVIUS.*

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PHILADELPHIA.

It is by no means rare to find occlusion of the aqueduct of Sylvius as one of the etiologic factors in internal hydrocephalus mentioned in text-books dealing with this subject. Attention is particularly attracted by the fact, however, that no references are given in most of the articles which refer to this occlusion as a possible cause, whereby one can determine that the author is speaking from clinical experience and not theorizing.

We have been struck with the *a posteriori* nature of discussions on this subject, and it is therefore with pleasure that we bring forward a case of internal hydrocephalus the cause of which is probably congenital almost total occlusion of the aqueduct of Sylvius.

Anton,[1] in dealing with the causes of hydrocephalus, quotes Baginsky's opinion that acute hydrocephalus is identical with acute non-tuberculous inflammation of the choroid plexus and the following increase of exudation. He adds that there is without doubt involvement of the ventricle walls and the ependyma. He also advances the view held by Rindfleisch, Huguenin and Von Bönninghaus to the effect that the inflammatory affection of the ventricles and choroid plexus is always associated with a meningitis serosa or purulenta, and that these are caused by toxic or infectious factors. Referring to Macpherson, he states as a possible cause an infectious phlebitis with thrombus formation of the venous sinuses. He says that occasionally the exciting agent of the inflammation gains access directly to the ventricle through the brain substance, with or without traumatism, and there sets up a fibrino-purulent process. Lastly he calls attention to a possible connection between rachitis and hydrocephalus.

Gowers[2] holds that the "only known cause" of acute hydrocephalus is meningitis. Speaking of chronic internal hydrocephalus he makes this interesting statement: "Sometimes all the ventricles are distended; more often the fourth ventricle suffers little, even where there is no obstruction in the aqueduct of Sylvius. In such a case the aqueduct may be funnel-shaped, dilated towards the enlarged third ventricle." This statement should be compared with the gross anatomical findings of our second case. Gowers further mentions the possible obstruction of the veins of Galen preventing the return of venous blood from the intraventricular vessels and thereby becoming a cause. Such a condition as this, if acute, is likely to cause ventricular hemorrhage and rapid death, as in a case reported by one of us (Spiller) with Wadsworth, but when developing slowly might be productive of internal hydrocephalus.

Oppenheim[3] speaks of compression of the aqueduct of Sylvius as a cause of internal hydrocephalus. D'Astros[4] states that an obstruction of the aqueduct of Sylvius will produce *une hydropsie* of the third and lateral ventricles; but he gives no instance of its so doing. A Henle[5] says that a closure of the aqueduct of Sylvius will cause a hydrocephalus confined to the third and lateral ventricles; but he gives no reference to a case. P. Bourneville[6] speaks of "another case" of hydrocephalus caused by the obliteration of the aqueduct, but no further information is given. F. Schultze[7] mentions the possibility of hydrocephalus being caused by the obstruction of the aqueduct, and refers to Seeligmüller's cysticercus case which we cite below.

Seeligmüller[8] speaks of a possible pressure on the aqueduct of Sylvius by a tumor causing hydrocephalus. In the same work he gives the history of his case of hydrocephalus caused by the plugging of the aqueduct by a cysticercus the size of a cherry stone. Apropos of cysticercus Karl Osterwald[9] has collected about thirty-four cases in literature of cysticercus in the ventricles of the brain, but in none of the cases given was the parasite in the aqueduct.

Bönninghaus[10] gives as a cause of hydrocephalus, what he terms an "acute automatic closure" of the aqueduct of Sylvius. By this he means that when the effusion into the third and lateral ventricles occurs rapidly, the more yielding portions of the third ventricle, i. e., the floor and the roof, become displaced and pull from above and below on the more solid pons and in this way produce an elongation of the aqueduct which may result in complete closure.

One of us[11] (Spiller) reported a case in which the third and lateral ventricles were dilated and the aqueduct was occluded by proliferation of the neuroglia. Two other cases of partial internal hydrocephalus have come under his notice. In one the distension was confined to one lateral ventricle of the brain and was caused by partial

* From the Department of Neurology and the Laboratory of Neuropathology in the University of Pennsylvania.

1. Flatau-Handb. path. Anat. d. Nervensystems.
2. Dis. of the Nervous System.
3. Lehrb. d. Nervenkrankheiten.
4. Les Hydrocéphalics, 1898, 75.
5. Beitr. z. Path. u. Therap. d. Hydrocephalus.
6. Brouardel, Traité de Médecine.
7. Nothnagel: Specielle Pathol. u. Therap.
8. Krankheiten d. Rückenmarks u. Gehirns.
9. Beit. z. Diag. d. Cysticercus Ventriculi Quarti-Neurolog. Centrbl., March, 16, 1906.
10. Die Meningitis Serosa Acuta, 1897.
11. Am. Jour. of Med. Sci., July, 1902.

inflammatory closure of the foramen of Monro; in the other case only the posterior horn of the lateral ventricle was distended, and very greatly, from unknown cause. In this case the occipital lobe of the affected side was a mere sac. He also refers to a case of Bourneville and Noir,[12] in which the aqueduct was entirely occluded, but there was no microscopic study of the tissues. In this same paper he (Spiller) speaks of Touche's case,[13] in which there was occlusion of the aqueduct.

Our first case was reported by one of us (Spiller) without microscopic study.[14] The history as obtained from the Pennsylvania Training School for Feeble-minded Children is as follows:

Patient.—Sally H., age 62 at time of death; American.

History.—Father died of consumption, aged 39; mother died aged 63, cause unknown; two brothers and two sisters died of consumption. One sister (the first born) died in early infancy, cause unknown; two brothers are living in good physical and mental condition. Of the details of the patient's birth nothing is known. She was supposed to have been born hydrocephalic and was weak and sickly as a baby. Sight, hearing and speech were good. She had epilepsy for years and during her seizures would froth at the mouth and purge. She suffered frequently from vomiting without assignable cause, and had occasional attacks of vertigo. She was said to have chronic kidney disease six years prior to her death. There was no paralysis at any time, and although no joint complication was present she always walked as though lame. She was said by Dr. Llewellyn, who had known her for years, to have been fairly well developed mentally. Her advanced age and her mental condition are remarkable in view of the extensive hydrocephalus.

Macroscopic Examination.—The third and lateral ventricles of the brain were greatly dilated and the white matter surrounding them was intensely atrophied. The whole cerebrum appeared as a greatly distended sac. The lateral ventricles freely communicated with one another, and the walls of the third ventricle were so pushed apart that the floor of this ventricle was on a level with the upper part of the basal ganglia.

Microscopic Examination.—Left Optic Thalamus: The blood vessels were thickened and there were some recent hemorrhages within the substance of the thalamus. All the vessels were distinctly congested. There was little vacuolation of the cells of the choroid plexus such as described by Raubitschek.[15]

Corpus Callosum: A section from the median portion of this structure was not more than 1 mm. in thickness; it stained normally and contained numerous amyloid bodies.

Left Occipital Lobe: In places the cortex and white matter were not more than 2 mm. in thickness; in other places the thickness was 6 mm. The atrophy was relatively much greater in the white substance than in the cortex. Where the width of the section was the least, more than half was occupied by the cortex. The cells were much diminished in number as shown by the thionin method.

The Fornix: This was much atrophied and the blood vessels within it were greatly thickened.

The aqueduct was almost occluded, this occlusion being probably a congenital malformation because the cavity was well lined throughout by a layer of ependymal cells, which would hardly be the case if the occlusion were caused by proliferation of the neuroglia. The neuroglia tissue immediately adjoining the ependymal lining was a little proliferated, and the aqueduct was filled with red blood corpuscles which were unaltered in shape, and probably were deposited there shortly before death. To the naked eye the aqueduct seemed to be entirely occluded. In a microscopic section the aqueduct to the naked eye was hardly as large as the point of an ordinary pin.

The second case is reported as one of intense congenital hydrocephalus without occlusion of the aqueduct. The pathologic material was received from Dr. Thompson S. Westcott, to whom the case belongs. The patient lived to be a year and a half old. The skull was excessively large. It is difficult to describe the gross appearance of the brain other than to say that it was a large thin bag of nerve tissue so attenuated in many places as to be translucent, and the mere handling of it caused numerous tears in its substance.

Microscopic Examination.—The corpus callosum was not more than 0.5 mm. thick.

Left Occipital Lobe: Sections in places were not more than 1 mm. thick. Here, as in the other case, the atrophy was much more pronounced in the white matter than in the cortex.

Left Motor Area, Median Side: The white matter was most affected. There was great diminution in the number of cells and the pericellular spaces were all distended. The cells appeared all decidedly smaller than normal. The pia was not thickened and the cortex and white matter were 4 mm. thick.

In contrast to the other case the fourth ventricle was greatly dilated as the result of the dilatation of the aqueduct of Sylvius. The cause of the hydrocephalus in this case could not be determined, but the condition seemed to have been a congenital malformation.

The two cases show very clearly that the distension of the fourth ventricle may depend on the patulency of the aqueduct of Sylvius.

12. Le Progrès Méd., July 14, 1900, 17.
13. Bull. et Mémoires de la Soc. Méd. d. Hôp. de Paris, 1902, vii, 141.
14. Jour. of Nervous and Mental Dis., 1900, 559.
15. Ztschr. f. Heilkun., 1905, p. 219.

MYXEDEMA: A STUDY.*

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INTRODUCTION.

HISTORICAL NOTE.

In 1873, in a paper entitled "A Cretinoid State Supervening in Adult Life in Women," Sir William Gull[1] first described the disease known later as myxedema. This name was suggested by Ord,[2] in 1877, as he said, "To be applied to an essential condition in the cretinoid affection occasionally observed in middle-aged women." He also wrote:

The whole collection of symptoms are related as effects to jelly-like swellings of the connective tissue, chiefly, if not entirely, consisting in an overgrowth of the mucous-yielding cement by which the fibrils of the white element are held together. Accordingly, I propose to give the name of "myxedema" to the affection.

He further emphasized the similarity of myxedema and cretinism and among other things pointed out that in one of his cases (as in one of the cretins reported by Curling), there was diminution in size and almost complete annihilation of the thyroid gland. Charcot[3] in 1880 proposed the name "cachexie pachydermique." He writes:

L'expression pachydermique nous parait bien rendre compte des traits dominants du tableau clinique et qu'elle en donne une idée, sinon plus exacte, tout au moins plus vivante que la dénomination des auteurs anglais.

J. L. Reverdin[4] in a paper before the Medical Society of Geneva in 1882, called attention to a train of symptoms following the total extirpation of goitrous thyroid glands. The symptoms which he enumerated were

* From the Medical Clinic of the Johns Hopkins Hospital, Baltimore.

1. Trans. Clinic. Soc., London, 1874, vii.
2. Med. Chir. Trans., 1878, lxi.
3. Le Progrès Médical, 1880, viii.
4. Rev. Med. de la Suisse romande, 1882, ii.

weakness, languor, hebetude, pallor and edema of the face and hands, without albuminuria. One case he states "was very analogous to a cretin." A year later (1883) the same author[5] pointed out the similarity of the group of symptoms to the myxedema of the English writers and named the condition "myxedema postopérative." He rightly attributed it to a loss of the thyroid gland. At the twelfth congress of the German Surgical Association in 1883, Kocher[6] described a similar train of symptoms following total thyroidectomy to which he gave the name, "cachexia strumipriva." He, however, thought the condition was due to a mechanical injury to the structures of the neck, resulting in a chronic asphyxia. Later Kocher acknowledged his mistake and accepted the view of Reverdin and Semon.

Sir Felix Semon,[7] of London, next pointed out the correlation of myxedema and cachexia strumipriva and suggested a common causative factor, namely, a loss of function of the thyroid gland. Paul Bruns, in 1884, reported the case of a boy, aged 10, in whom extirpation of the thyroid gland was followed by the condition known as sporadic cretinism.

These observations led the Clinical Society of London to appoint on Dec. 14, 1883, a special committee to investigate this subject. The members of this committee immediately set about their researches and in 1888 published their monumental report[8] which has formed the groundwork for all later investigation of the subject. The committee comprised such men as Victor Horsley, who directed the experimental work, William Ord, who collected the clinical data, and Halliburton who investigated the chemistry of the tissues. In 1887, Virchow contributed some data to our knowledge of the pathology of the disease. More recently many valuable contributions have been published, which will be discussed later.

In America the first case of myxedema was reported in 1881 by W. A. Hammond.[9] In 1888 Hun and Prudden[10] described in detail 4 cases of their own and reviewed the literature up to the date of publication.

DEFINITION.

In his monograph, Murray[11] defines myxedema as follows:

> It is an affection characterized by widespread changes in nutrition as shown by the appearance of solid edematous swelling of the subcutaneous tissues, dryness of the skin and arrest of development of its appendages, subnormal temperature, slowness in the mental processes and in the execution of voluntary movements.

CLINICAL VARIETIES.

Under the general term myxedema are included three groups of cases: 1, cretinism; 2, myxedema proper; 3, operative myxedema.

1. Cretinism.—This is a chronic affection, either congenital or appearing at any time before puberty. Osler[12] says:

> It is characterized by disturbance of the growth of the skeleton and soft parts, a remarkable retardation of development, an extraordinary disproportion between the different parts of the body, and a retention of the infantile state with a corresponding lack of mental progress.

Three sub-varieties of cretinism are now recognized:

a. Endemic cretinism which develops in certain localities of Italy, France and Switzerland, in association with goiter under local conditions of an obscure toxic nature. No cases of this variety have occurred in America.

b. Sporadic cretinism in which the thyroid gland may be congenitally absent or atrophied after one of the specific fevers or in association with goiter. In 1897 Osler[13] collected 60 cases of this type in America. Many more cases have since been reported.

c. Juvenile myxedema is a term suggested by Parker for a small group of cases occurring in children who have developed physically and mentally until their fourth or fifth year at least, at which time the symptoms occur in consequence of atrophy of the thyroid gland following in all probability an acute thyroiditis in the course of an infectious fever, as typhoid, scarlatina, etc. In this group there are the usual symptoms of the adult form, but there is also an arrest of development at that stage of a child's growth when the disease set in. Osler and others in America have reported a few instances of this variety.

Pineless[14] in a very excellent paper has recently drawn sharp lines of demarcation between three types of cretinism, which are practically identical with the foregoing. His varieties are: a, Thyroaplasie or congenital myxedema; b, infantile myxedema; c, endemic cretinism. The first type, though rare, includes some of the sporadic cases. The second comprises those cases in which atrophy of the gland occurs in association with goiter or follows one of the specific fevers; the third is identical with endemic cretinism above described.

A remarkably elaborate monograph on "Cretinism" by Wilhelm Scholz,[15] of Graz, has recently appeared, and is well worth a careful perusal. His clinical material is particularly rich, and some of his conclusions are both interesting and original.

2. *Myxedema Proper.*—This includes those cases in which the symptoms develop in an adult at any age after puberty.

3. *Operative Myxedema or Cachexia Strumipriva.*—This is the variety in which the symptoms of myxedema develop after a total thyroidectomy for goiter or other disease of the thyroid gland. Of this variety there are two different types, the cretinous and the adult myxedematous, according to the age of the patient at which the gland was removed.

In the American literature prior to July 1, 1905, I find but two cases of operative myxedema. The first, Dr. McGraw's case, which is briefly referred to by Osler,[12] occurred in a young man in whom a complete thyroidectomy for goiter at the age of 12 was followed six years later by the gradual development of the typical myxedematous features which persisted for 12 years. A second case was mentioned by Huntington[16] at a meeting of the California Academy of Medicine, Nov. 27, 1900. This patient was also a male in whom myxedema followed one year after complete thyroidectomy. More recently Moffit[17] states that two cases of postoperative myxedema have occurred in California, one of which was in all probability Huntington's case. I have not included any of these cases in my series which is restricted to myxedema proper.

Abortive forms occur in myxedema just as in exophthalmic goiter. The French have suggested the term

5. Ibid., 1883, iii.
6. Verh. d. Deutsch. Gesellsch. f. Chir., 1883, ii.
7. Brit. Med. Jour., 1883, ii.
8. Clinic. Soc. Trans. (London), 1888, supplement vol., xxi.
9. "Neurological Contribution" (New York), 1881, i.
10. Am. Jour. Med. Sci., 1888, xcvi.
11. Twentieth Cent. Practice, 1895, iv.
12. Am. Jour. Med. Sci., 1893, cvi.
13. Trans. Cong. A. M. Physicians and Surgeons, 1897, 12.
14. Wien. klin. Wochschr., 1902, xv.
15. "Klin. und anatom. Untersuch. über Cretinismus," Berlin, 1906.
16. THE JOURNAL A. M. A., 1901, xxxvi.
17. Ibid., 1905, xlv.

"myxedeme fuste." J. L. Reverdin[18] in 1886 first noted this form in cases following partial thyroidectomy in which there was subsequent atrophy of the remainder of the gland. In these cases there may be no mucinoid infiltration of the skin but there is a liability to swelling and localized hypertrophy of the mucous membranes of the nose, throat, etc., as well as a predisposition to tonsillar enlargement and adenoid formation. Further, the teeth may decay early and the hair fall out prematurely. The French consider loss of the outer half of the eyebrow as almost pathognomonic of this type of the disease. In women there is also a tendency to circulatory disturbances of the mucous membranes at the menstrual period or a hyper-sensitiveness of the nose, throat or even of the vaginal mucous membrane. Chronic constipation, painful joints, vague pains between the shoulders, paresthesiæ and an occasional giving way of the legs, are other obscure manifestations of the disease. Moffitt[17] has reported 11 cases of this type, in all of which definite improvement followed thyroid medication.

CASE REPORTS.

The following 10 cases occurred in the practice of Dr. William Osler, either in private or in the wards of the Johns Hopkins Hospital.

CASE 1.—*White female; aged 37; quintipara; sister of patient in Case 2; a second sister with exophthalmic goiter; a third sister with Raynaud's disease; three years' duration; thyroid therapy; loss of 54 pounds; recovery. (Previously reported by A. R. Oppenheimer.)*

Patient.—M. D., American, housewife, of Virginia, was admitted Jan. 26, 1894, to the Johns Hopkins Hospital complaining of "swelling of the body."

History.—The parents were not blood relatives; of two brothers one had "renal trouble." There were three sisters, one of whom is the patient in Case 2 of this series; another had exophthalmic goiter and died from "peritonitis," and a third later consulted Dr. Thayer (October, 1905) for Raynaud's disease. Patient had always been healthy and had borne five children.

Present Illness.—This dated back three years (1891), when at the age of 34, while pregnant, she underwent a prolonged physical and mental strain. Subsequently she gave birth to a child, which lived only three months. About three months after delivery and about ten days before her menstrual period, she first noticed that her entire body became more or less swollen, but did not pit on pressure. This swelling was repeated before subsequent "periods," but would disappear temporarily with the onset of the flow. A year before admission (1893) the menses became less frequent, being at intervals of from six to eight weeks. The swelling also became more or less constant, though it was more pronounced at certain times. The tongue began to feel stiff and swollen. Later the skin became dry, harsh and rough; there was some loss of hair and a constant chilly sensation. The bowels were constipated. The appetite was good. Micturition was free, but never excessive. There was no loss of memory or difficulty of speech.

Physical Examination.—On Feb. 26, 1894, examination revealed a very large woman of medium height, weighing 189 pounds. She was very garrulous. The face was heavy, rather dull and expressionless. The cheeks and neck were very full and with an almost edematous appearance. The complexion was doughy, without any marked hectic flush. The supraclavicular regions were moderately full. The arms and legs were decidedly swollen. The dorsal surfaces of the hands and feet were very puffy and edematous looking, but nowhere pitted on pressure. The skin had a resistant feel, very dry and in some places showed a little scaling. The hair was rather dry and coarse. The finger nails were thin, with marked longitudinal striations, and a slightly everted and very irregular free edge. The thyroid gland could not be felt, though, owing to the thickness of the neck, it was impossible to determine any diminution in its size.

The abdominal and thoracic viscera were normal. The pulse ranged between 60 and 68 to the minute. The temperature in the mouth ranged between 97.6 and 98.4 degrees. The urine had a specific gravity of 1020; and on two examinations contained neither albumin nor casts.

Clinical History.—Jan. 27, 1894: Five grains of desiccated sheep thyroid were given three times a day.

January 31: In the evening there was a very striking fulness over both clavicles, and a mass the size of a hen's egg was present in each fossa. These disappeared by next morning.

February 2: For the first time she complained of weakness, headache and pain in the back. The pulse had become more rapid, ranging from 80 to 90 to the minute. There was sweating and some nausea. She had taken but 65 grains in the five days, and had lost 8 pounds. The dose was reduced to 5 grains twice a day.

February 9: She had then taken 160 grains of thyroid. The temperature and pulse range since February 2 was 98.4 to 99.5 degrees and 84 to 108, respectively. There was a loss of 10½ pounds during twelve days' treatment.

She was discharged from the hospital much improved, with directions to continue the treatment at home.

Further History.—A letter from her physician, Dr. H. B. Melvin, stated that her improvement continued. During the first twenty-five days of treatment she had lost 25 pounds, and the loss continued until she then was very nearly her normal weight.

November, 1894: She was then taking only 3 grains every second day, and though eight months' pregnant, was very well.

Sept. 30, 1896: The patient was readmitted to the hospital for observation. "Her condition beyond being nervous was very good." The skin was soft and natural and there was no edema.

October 1: Her weight was 135 pounds, i. e., a loss of 54 pounds since admission in 1894.

October 9: After a few days' rest in the hospital she was discharged.

Oct. 21, 1905: The patient consulted Dr. Thayer, who kindly gave me the following notes: "She has regarded herself as well since leaving the hospital. She has, however, taken the thyroid intermittently. Her ordinary course has been to take 5 grains of Armour's extract in capsules three times a day for four or five days, then to stop taking anything for two or three weeks, at the end of which time she begins 'to feel slow and tired and to swell.' This swelling consists of a puffiness of her hands and shoulders. The ankles are continually puffy. Her pulse is always slow, and she is always rather susceptible to cold, a susceptibility which is much more marked after she has stopped taking the thyroid for a considerable length of time."

On examination, "she looked well and bright. The face, however, was a little heavy and above the clavicles there was rather a marked fulness. The hands were chubby, but nothing more. About both ankles there was a marked elastic puffiness. Between the sternomastoids in the region of the thyroid there was a distinct hollow; the thyroid was not to be felt. The pulse was 68."

CASE 2.—*White, female, aged 19; nullipara; sister of patient in Case 1; exophthalmic goiter (previously reported by A. R. Oppenheimer); readmitted at 22 with myxedema; no trace of goiter; thyroid therapy; recovery.*

Patient.—S. E., American, of Virginia, was admitted Jan. 26, 1894, to the Johns Hopkins Hospital, complaining of "enlargement of thyroid gland" and "great nervousness."

History.—Her family history was the same as that of her sister, the patient in Case 1. Patient had measles and scarlatina in childhood. Menses had always been irregular, appearing only once in the previous year. Patient was single and had borne no children.

Present Illness.—This began in 1891, three years before admission, when after a severe fright she became very nervous, excitable and restless. There were frequent palpitations of the heart. The thyroid gland became enlarged in 1893 and re-

18. Congrés franc. de Chir., 1886, ii.

mained so. There were attacks of dyspnea due, the patient thought, to pressure on the trachea by the goiter. There was also tremor of the hands following any excitement. The voice became husky; the eyes became a little more prominent. The appetite was good; there was no nausea and no vomiting. Bowels were regular; there was no cough.

Physical Examination.—Examination on Sept. 26, 1894, revealed a slight though well nourished girl, of very neurotic temperament. The face was flushed and there were numerous areas of transient flushing of the skin over the body. There was a decided double exophthalmos, but von Graefe's sign was absent. There was marked symmetrical enlargement of the thyroid gland. The apex beat of the heart was in the sixth interspace; the impulse was powerful and heaving; first sound markedly booming. The lungs and abdominal viscera were negative. The urinalysis showed a specific gravity of 1012, with a slight trace of albumin, but no casts. The pulse was rapid, from 110 to 120 to the minute. Temperature was 99 to 99.5 degrees. Weight was 137 pounds.

Clinical History.—January 27: A diagnosis of exophthalmic goiter was made and the patient was given thyroid extract gr. v, t.i.d.

February 2: A very definite fine tremor of the hands was noted.

February 9: She was discharged after having taken 200 grains of thyroid extract and having lost 2½ pounds (134½ pounds).

Subsequent History.—November 22: After her discharge from the hospital, she was given tincture belladonnæ, gr. xv, t.i.d. for two months, which resulted in some diminution in the size of the goiter and in the degree of exophthalmos.

May 7, 1897: Patient was readmitted. She was then aged 22 and single. She complained of "general swelling" and "soreness."

After leaving the hospital in 1894 she had not felt very strong and was unable to take any active exercise. In January, 1896, her friends noticed that she was becoming stout, and the patient found that her collar was getting tight and that her shoes would not button. The swelling was general, including the supraclavicular regions. It was more pronounced after exercise and in the afternoon. She felt very drowsy and "not up to anything." Her speech became slow. Occasionally the skin of the hands and face around the mouth would turn purple. She suffered from the cold, especially in the evenings, and she became very nervous. Bowels were regular. There was no increase in the amount of urine. She was given thyroid extract three times a day by her physician, and at first improved, but later became so weak that she was unable to sit up, and the dose was reduced.

Second Physical Examination.—Examination on May 7, 1897, revealed a paler and little fuller facies than on previous admission. There was no puffiness above the clavicles. The goiter had entirely disappeared. The tongue was rather large, dryish and indented. The hands were a little full. The feet and legs above the ankle joints were swollen, but did not pit. The skin was harsh. Over the face was a marked vasomotor disturbance. There was marked dermatographia. Superficial reflexes were active. Except for a palpable right kidney the examination was negative.

Urine had a specific gravity of 1010, and contained neither albumin nor casts. The amount in twenty-four hours was 340 to 800 c.c.. Temperature was from 99.4 to 98.2 degrees; pulse, 60 to 98; weight, 122 pounds (i. e., 12½ pounds less than on discharge, February, 1894).

Further Clinical History.—May 12, 1897: She was given thyroid extract, gr. ii, t.i.d., which, on May 23, was increased to gr. iv.

May 31: Dr. Osler noted that "the joints of the feet were painful, but not swollen or infiltrated. There was some puffiness of the wrist and face. The legs were much smaller and more natural. There was slight tremor. There was no enlargement of the thyroid gland, but the lobes could be felt. There was instability of the vasomotors of the skin, and a patchy chloasma over forehead, chin and neck." Patient was discharged "much improved," having taken 186 grains of thyroid extract and having lost 4 pounds in weight (118 pounds). Her temperature after beginning treatment was practically unaffected, being still always above normal, but the pulse ranged a little higher (70 to 112). The quantity of urine also showed some increase, sometimes reaching to 800 and once to 950 c.c. in the twenty-four hours.

Oct. 21, 1905: Dr. Thayer learned from the sister (Case 1) that the patient "has grown rather worse. From time to time she has had definite mental symptoms, being 'flighty.' She feels that she is sick and that her presence in the house makes others sick and she tries at times to get away." At other times she is perfectly well except for "nervousness." There was no statement as to the use of the thyroid tablets.

CASE 3.—*White, female, aged 23; nullipara; consanguinity of grandparents and parents; duration four months; marked delusions and hallucinations; thyroid therapy; loss of 3⅜ pounds in two weeks; recovery.*

Patient.—E. T., German; tobacco factory girl of Baltimore, was admitted to the Johns Hopkins Hospital June 26, 1894.

History.—Her paternal grandparents were first cousins. Her father and mother were healthy, but were second cousins. There was a history of tuberculosis in mother's family. There was no history of goiter, myxedema or neurosis in the family. Patient was born in Germany, in the district of Westphalia, but came to America at 16. She did not remember having seen any cases of goiter, etc., in her native village. Except for the diseases of childhood she had always been well and strong. The menses began at her fifteenth year and were regular until after her arrival in America, when she had amenorrhea for three months. They returned and were regular until May, 1891. She came to the Johns Hopkins Hospital Dispensary on June 6, 1891, complaining of pallor, constipation, fulness after eating and loss of weight. Physical examination was practically negative except for slight chlorosis.

She occasionally attended the dispensary during the following year. The general condition improved markedly, though the catamenia did not return. Between April 9, 1892, and June 25, 1894, the patient was lost sight of. When last seen she was a rather delicately formed, well-nourished girl with good color and delicate attractive features. On June 26, 1894, she applied to the hospital for treatment and was admitted. The following additional facts were obtained: On July 15, 1893, she went to the country as chambermaid. While there her general condition improved greatly. The catamenia reappeared for the first time since 1891, and became regular, lasting three days without pain. She returned from the country Oct. 1, 1893, and went to work in a tobacco factory.

Present Illness.—In February or March, 1894, her health began to fail. In April, 1894, her family began to notice that her eyes appeared swollen. She herself observed loss of appetite, dryness of the throat and also a general dryness of the skin, with absence of sweating. The swelling increased and appeared also in the hands and arms. Her friends noticed that her voice became changed, being deeper and harsher, while she spoke in a distinctly slower, more expressionless manner. There was an unnatural thirst. She became very susceptible to cold and wore heavier clothes than formerly. She was very irritable and nervous and her ordinarily placid disposition entirely changed. Her sleep, however, was always good. In fact, there was a certain tendency to drowsiness and she was easily fatigued. The bowels were constipated. There was no cough, but she complained of a heavy feeling in her chest. Several weeks before entry she began to have delusions. She fancied that certain members of her family were going to poison her. She also believed that she was pregnant, and insisted that she felt something moving in her abdomen. She declined to stay at home, and went to the house of a companion, who brought her to the hospital. She had gained slightly in weight.

Physical Examination.—Examination by Dr. Thayer June 26, 1894, revealed a most extraordinary change in her general appearance. There was marked puffy edematous condition of the face, hands and arms, which did not, however, pit on pressure. She had a peculiar muddy complexion. The puffiness was particularly marked about the eyes, the bridge of the nose and chin. There was a fulness over the clavicles, but no marked edema. The hands and arms showed the same puffy appearance, without any pitting. She had an expressionless,

dull manner, talked slowly, appeared suspicious and was distinctly irritable. She was reticent about stating her delusions and was unwilling at first to allow a physical examination. The urine was free from albumin. The thyroid gland could not be distinctly felt. A diagnosis of myxedema was made, and she was admitted to the hospital for observation. During the first four days there was little change.

Clinical History.—June 30, 1894: Dr. Thayer noted that the skin, particularly that of face and hands, was rather dry, harsh and resistant. The lips seemed thick. The general expression was dull and heavy, very similar to that in acute nephritis. The cheeks were pink in rather sharp contradistinction to the white areas elsewhere. The hair was dry, but the nails were well formed. The pulse was slow, 50 to the minute, regular and full. The thyroid gland appeared extremely small, being scarcely distinguishabie on palpation. The heart, lungs and abdominal viscera seemed normal. The deep reflexes were not increased. There was no edema of the legs. She was placed on desiccated thyroid, gr. iii, t.i.d.

July 1, 2 and 3: The urine showed no albumin and no casts and a normal specific gravity (1020 to 1022).

July 4: There was a trace of albumin, but no casts.

July 5: Blood examination revealed: Hb = 59 per cent.; red blood corpuscles, 3,532,000; white blood corpuscles, 6,000. A differential count of 500 leucocytes gave:

	Per cent.
Polymorphonuclear neutrophiles	77.4
Small mononuclears	17.1
Large mononuclears	4.2
Eosinophiles	1.3

There was no poikilocytosis.

July 9: The condition had changed materially since beginning the thyroid treatment 9 days before. The puffiness about the face had diminished, but scarcely as much as that about the hands and arms, which had disappeared in a most remarkable manner. The mental condition had entirely cleared up and she was then bright and cheerful. Pulse was 104.

July 14: A further change in her condition was noted. While the face was still a little full, the edematous appearance about the eyes was almost entirely gone. The change in the hands and arms was almost more remarkable. The skin was no longer dry, but moist and warm, and she stated that there was a good deal of sweating. She was placid and cheerful. The blood count revealed Hb. 69 per cent.; red blood corpuscles, 6,124,000; white blood corpuscles, 8,500.

She was discharged on the fourteenth day much improved, having taken 270 grains of thyroid extract and having lost 3½ pounds.

The temperature, which was usually normal or slightly above, showed later a tendency to be subnormal. The pulse which formerly ranged between 72 and 86 became more rapid with the thyroid treatment and varied from 80 to 105. She was directed to continue the thyroid extract, but to increase the dose to gr. vii, t.i.d.

Subsequent History.—July 28, 1894: She returned to report herself as feeling perfectly well. The change in her physical condition was most extraordinary. All signs of puffiness were gone, her color was natural, her voice and manner as they used to be.

Sept. 4, 1894: She again reported; she had gained materially in weight, and looked stronger and better. There was no sign of puffiness in the face or hands. She was then taking the glycerin extract, instead of the desiccated powder, every other day.

Dec. 14, 1894: She was not feeling as well, as she had been more irregular in the use of the thyroid extract. The face was a little swollen and the skin dry. There was a tenseness about the skin of both hands and feet, but no swelling of the legs.

At intervals during the subsequent ten years Dr. Thayer saw the patient, who remained free from symptoms as soon as she recognized the absolute necessity of taking small doses of the thyroid gland.

Oct. 20, 1905: The patient reported again at Dr. Thayer's request. She stated that she still took a 5-grain tablet every day. If she omitted it for more than forty-eight hours she felt the bad effects. The general health was excellent. Menstruation was regular. On examination she looked well. There was still a little roundness about the face and a peculiar expression about the eyes due to a little fullness of the lids, but so slight as to be overlooked by the casual observer. Her skin felt natural. There was, however, a striking depression over the thyroid cartilage and no trace of the gland could be felt.

(To be continued.)

PATHOLOGY OF PARALYSIS AGITANS.*

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PHILADELPHIA.

The subject of the pathology of paralysis agitans is one on which few physicians have definite ideas, and those who have differ widely from each other. It is obvious that so long as the nature of this disease is in controversy and obscurity the treatment must be imperfect, changeable and unfortunately inefficient. Numerous investigations with the idea of clearing up this problem have but added to its complexity by suggesting new hypotheses and unexplored fields for reasearch.

The clinical picture of paralysis agitans is so clear cut and typical, the course of the disease so unchangeable and progressive that it certainly suggests an organic basis. To classify it as a neurosis is begging the question and explains nothing, while it would be distinctly harmful if it hindered further search for the real pathology.

SUMMARY OF LITERATURE.

In order to define the present status of our knowledge of the subject, it will be necessary to review briefly the findings and opinions recorded by numerous observers since Parkinson wrote his classical paper in 1817. For the sake of convenience these findings may be classified according to their location into: 1. Those in the nervous system, the brain, spinal cord and peripheral nerves. 2. Those in the muscles. 3. Those in the ductless glands.

The gross lesions in the central nervous system found by some of the earlier writers which were regarded by them as the cause of paralysis agitans are not now credited with such a relationship. It must be remembered that at that time the difference between multiple sclerosis and paralysis agitans was not well understood; consequently, in the opinion of Wollenberg,[1] one of the cases which Parkinson himself described was probably a case of multiple sclerosis and, according to the same authority, similar cases have been reported by Oppoholzer,[2] Marshall-Hall,[3] Skoda,[4] Lebert[5] and others.

Confusion has arisen, also, from the fact that cases are reported in which paralysis agitans was combined

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906. This paper was accompanied with a detailed report of fourteen cases, for which THE JOURNAL could not give space. The author offers to send a reprint of the complete article, including the case reports, to anyone who requests it and sends a two-cent stamp for postage. The entire article will also appear in the volume of Transactions of the Section on Nervous and Mental Diseases of the American Medical Association, 1906, and in the volume of Contributions of the Laboratory of Neuropathology of the University of Pennsylvania, 1907.

1. Nothnagel: spec. Path. u. Therap., xii.
2. Wien. med. Wochschr., 1861, Nos. 36-38. Quoted by Wollenberg, reference 1.
3. "Traité des Maladies du Systeme Nerveux," 1841.
4. Wien. med. Halle, 1862, No. 13.
5. "Handb. d. prakt. Med.," 1871, ii, p. 632.

with multiple sclerosis, as in the case reported by Furstner[6] (his second case) and the case of Schultz,[7] in which the diagnosis is questionable, as he only found areas of sclerosis of pinhead size ("Stecknadelkopfgrosse"), but Sanders[8] thinks it should be included in this category. Many of the earlier writers recorded as paralysis agitans cases in which the tremor was symptomatic of some gross lesion of the brain, such as the case reported by v. Leyden[9] of a sarcoma of the left optic thalamus, also those of Charcot,[1] Benedikt,[1] and Blocq and Marinesco,[10] who described cases of tremor caused by tumors situated in the region of the cerebral peduncles. Chvostek[11] reported a case in which clinically there was first paresis, then tremor of the extremities on the left side, and in which anatomically there was a sclerosis of the entire right cornu ammonis. Ordenstein[12] found in one case areas of softening in the cerebral peduncles, but in the two other cases reported by him at the same time the findings were negative. Herterich[13] described a case with very marked contractures in which he found an area of softening in the left cerebral peduncle. Cases have been reported by Virchow,[14] Leubuscher,[8] Berger[7] and others in which areas of softening in the brain were the cause of a tremor. In reporting a case of tumor of the left prefrontal lobe, Mills and Weisenburg[15] say:

> There were muscular tremors in the hands and legs much like those seen in paralysis agitans. At first they were on the left side only, but toward the end involved the right side also. They were at first partially under control, and by an effort of will the patient could stop them; later he could not, and they occurred also during sleep.

Though this tremor differed in some respects from the tremor of paralysis agitans, it is difficult to see why, if a symptomatic tremor, it should have begun on the same side as the tumor. There are many instances of gross lesions found in the brain which are simply conditions complicating the paralysis agitans, viz.: Oppolzer[16] found an apoplectic cyst in the occipital lobe accompanied by an ependymitis of the lateral ventricles, especially the posterior horns; v. Sass[17] reported a case in which there was an ependymitis of the fourth ventricle. At present the occurrence of gross lesions in the central nervous system in cases of paralysis agitans is regarded as merely a coincidence.

A critical study of the positive pathologic findings in the central nervous system in cases of paralysis agitans reported by numerous investigators leads to the conclusion that they are simply the changes of senility modified occasionally by intercurrent affections or the senile marasmus that is so often the cause of death in these cases. The lesion regarded as specific for the disease by one observer is expressly denied by many others. In most of the cases the lesions described are diffuse and affect various anatomic elements, nerve fibers, nerve cells, neuroglia, the blood vessels, etc., but there is the greatest diversity of opinion as to which is the most affected, and it is evident that these findings have no constant relation to the disease. Occlusion of the central canal by the overgrowth of the epithelial cells is described by Joffroy,[18] Demange[19] and many others. In the case reported by Murchison and Cayley[20] the central canal was widened and filled with leucocytes. In many cases numerous amyloid bodies were found in the spinal cord. Cases are reported as presenting a partial degeneration of the tracts in the white matter of the spinal cord. Burzio[21] found a light grade of atrophy in many fibers of the crossed pyramidal tracts and of Goll's and Burdach's columns. Dowse[22] found degeneration of only one lateral column. Sanders[8] found "a somewhat diffuse degeneration of nerve fibers in the spinal cord, but especially in the direct and crossed pyramidal tracts." Most investigators expressly deny the existence of any degeneration in the spinal cord, and in the 14 cases studied by me I was unable to detect any degeneration in the Marchi methods of staining.

Many writers have described changes in the neuroglia in paralysis agitans. Schultze speaks of a chronic "leptomeningitis and chronic interstitial myelitis." Murchison and Cayley found thickening of the subpial neuroglia layer with extension of the proliferation into the cord and islets of sclerosis scattered throughout the spinal cord by either the Weigert hematoxylin or the cord, especially in the dorsolumbar region and more in the posterior root entrance zone. Demange,[19] Joffroy[18] and Dubief[23] report similar findings. Koller[16] found practically the same in his case, but questions whether we can draw a line between this proliferation and the neuroglia increase in senility. In paralysis agitans the neuroglia overgrowth, he thinks, was more marked in the lateral and posterior columns, and he considers it to be the primary change, which by interfering with the lymph circulation causes secondary alteration of the nervous elements. Redlich[24] lays great stress on the increase of glia tissue which he found, especially about the blood vessels, forming small islets which had a tendency to become confluent and form larger islets. This perivascular sclerosis occurred chiefly in the anterolateral columns, and the stiffness of the muscles and the tremor, in his opinion, are due to a functional disability ("schwäche") of the nerve fibers. Somewhat similar findings are described by Wollenberg,[1] Borgherini[25] and Sanders,[8] but the last two mentioned found the neuroglia proliferation more marked in the gray matter than in the white. Sanders especially emphasizes this as being a different condition than that found in senility. He found not only a comparatively greater increase in the amount of neuroglia tissue in the anterior horns, but also numerous spindle cells ("spinnenzellen") in both cases of paralysis agitans and cases of senility with a marked tremor. He explains the tremor and also the difficulties in gait by assuming that this glia overgrowth interferes with the connection between the upper and lower motor neuron. As contrasted with these findings, Dana[26] describes a very moderate increase in the connective tissue within the cord and none of the islets of neuroglia described by Redlich.[24]

6. Arch. f. Psych. u. Nervenkrankh., 1898, xxx.
7. Virchow's Arch., lxviii, 1876, p. 120.
8. Article by Sanders: Monatschr. f. Psych. u. Neurol., 1898.
9. Virchow's Arch., xxix, p. 202, 1864.
10. Ref. in Neurol. Centrbl., 1894.
11. Wien. med. Wochschr., 1871, Nos. 37 to 39.
12. Thèse de Paris, 1868.
13. Herterich Dissert., Würzburg, 1878. Quoted by Keller, reference 16.
14. Virchow: Die krankhaften Geschwülste, xi. Cited by Sanders, reference, 8.
15. THE JOURNAL A. M. A., 1906, No. 5.
16. Article by Koller: Virchow's Arch., cxxv, p. 287.
17. Petersburg Wochschr., 1891, Nos. 19-20, abs. in the Neurol. Centrabl., x, p. 756.
18. Gaz. de Hôp., 1871, p. 602.
19. Rev. Méd. de l'Est, 1897.
20. Trans. Path. Soc., Lond., 1871.
21. Riv. spermin di frenatria, 1903, No. 4, 1904, No. 1, abs. in Centrabl. f. allg. Path. u. path. Anat., xvi, p. 700.
22. Trans. Path. Soc., Lond., 1879, xxix, p. 17.
23. Thèse de Paris, 1887.
24. Jahrb. f. Psych., xii, p. 385.
25. Article by Borgherini: Wien. med. Wochschr., 1890.
26. Am. Jour. Med. Sci., November, 1899.

Pathologic changes in the blood vessels of the central nervous system are described by many writers on the subject. They are generally of the arteriosclerotic type, but in some cases are described as peculiar either in character or distribution. Burzio[21] found the blood vessel walls thickened, especially in the neighborhood of the neuroglia overgrowth, and Sanders emphasizes this relation. Sanders found also that the finer capillaries were more affected than the larger, a fact which has been noted by Joffroy,[18] v. Sass[17] and by Murchison and Cayley.[20] The last named and also Ketscher[27] found miliary hemorrhages here and there in the spinal cord. J. R. Hunt[28] found that the blood vessels in the spinal cord were increased in number and there was a universal cellular infiltration about them which, when stained by Erlich's method, proved to consist of escaped leucocytes. Miliary aneurisms were seen in the spinal cord by Borgherini,[25] Ketscher[27] and Sanders.[8] Carrayou[29] found varicosities of the veins in the medulla with small areas of softening in the oculomotor root and pyramidal tracts, and he explains the clinical symptoms of the disease on the ground that these lesions interfere with the passage of the nervous impulses. Redlich[24] speaks of a hyaline degeneration of the blood vessel wall with an especial thickening of the media and a proliferation of tissue about the blood vessel which fills up the perivascular spaces. These changes, he affirms, were much less marked in the medulla oblongata and were not there accompanied by the perivascular sclerosis. Dana[26] could discover no special thickening of the walls of either the veins or arteries in his case. Borgherini[25] found changes in the sympathetic ganglia, degeneration of the cells with an overgrowth of the interstitial tissue.

Philip[30] found degenerated Betz cells in the paracentral lobules. The change consisted in a diffuse staining of the cells and a similar though less marked condition was noted in the motor cells of the anterior horns of the spinal cord. His finding is the only direct pathologic evidence I could discover bearing out the oft repeated assertion (Gowers,[31] Bychowski[32] and others) that paralysis agitans is a disease of the cerebral cortex. Gordinier[33] found changes in the motor cells of the cereoral cortex, but not so marked there as in the spinal cord. The Golgi stain showed the dendritic processes nearly normal.

The condition of the anterior horn cells of the spinal cord has been noted as normal in some of the cases to which reference has already been made (Redlich,[24] Wollenberg[1] and others). In a large number of cases the anterior horn cells were found to contain an excessive amount of yellow pigment (Dubief,[23] Dowse,[22] v. Sass,[17] Hunt,[28] Borgherini,[25] Herterich,[13] Joffroy,[16] Ketscher,[27] Gordinier,[33] Luys[34] (of the medulla oblongata), Sanders[8] and others). Joffroy[35] and Demange[19] describe also a pigmented condition in the cells of the column of Clarke. Gordinier[33] also noted this, but found it less marked than in the anterior horn cells. Distinct degenerative changes in the anterior horn cells are described by Demange,[19] Koller,[16] F. Burzio,[21] Caterina,[36] Hunt,[28] Gordinier[33] and Dana.[26] The changes described as present in these cases differed somewhat, but were generally a chromatolysis, with a loss or displacement of the nucleus of the cell, atrophy of the cell, vacuolation of the cell, tumification of the nucleolus, etc. Dana[26] lays great stress on diminution in number and pathologic changes in the dendritic processes of the spinal motor cells, with a consequent diminution in richness of the dendritic plexus in the anterior horns. He found this lesion most marked in the lower cervical and first dorsal segments (corresponding to the beginning of the tremor in his case), next in the midcervical, then midlumbar, upper sacral and least in the middle and upper dorsal. The brain cortex showed slight degeneration of the cells. It should be remembered that Dana's case was complicated by sarcomatosis, and death was due apparently to exhaustion, and that in such cases a tumor toxin is probably present which produces chromatolytic and degenerative changes in the nerve cells.

No pathologic changes in the cerebellum were noted by Dowse,[22] v. Sass,[17] Borgherini,[25] Redlich,[24] Hunt,[28] Gordinier[33] or Dana,[26] except participation to a moderate extent in a general arteriosclerosis. Hunt[28] and Gordinier[33] found the spinal nerve roots normal. Dana[26] found them greatly congested, and by Borgherini[25] and Redlich[24] they were found slightly degenerated.

A long list could be made of cases in which the pathologic examination of the central nervous system was negative. Thus Koller[16] cites the cases of Peträus,[37] Olliver,[16] Cohn,[38] Charcot,[39] 3 cases; Westphal,[40] Simon,[16] 4 cases; Bauer,[41] 2 cases; Leroux[42] and Weinkowitz.[43] To these may be added the case of Oppenheim,[8] in which he found only a "questionable" staining of the columns of Goll. Furstner[6] mentions specifically that there was no pathologic condition present in the brain or spinal cord of his first case, the blood vessel walls were not thickened and there was no increase of the neuroglia nor changes in the nerve cells. His patient was 61 years of age and had the disease for five years. Schwenn[44] reported a case of a patient who died at the age of 43½ years and was therefore no senile. He says: "I found neither in the brain nor spinal cord any pathologic changes." Idelsohn[45] and Blocq[46] also report cases in which there was no pathologic change in the central nervous system.

Various changes have been observed in the peripheral nerves. Borgherini[25] found in the vagus, median and external tibial nerves a hyperplasia of the interstitial tissue and increased vascularity. Skoda[4] found thickening of the neurolemma in the nerves of the upper extremities. Joffroy reported a case in which paralysis agitans was combined with a peripheral neuritis, and Follet and Marquis[47] report *Un cas de maladie de Parkinson fruste, peutêtre d'origine polyneuritique.* Their paper is inaccessible to me. Borgherini,[25] Redlich,[24] v. Leyden[7] and Ketscher[27] have noted an increased amount of the interstitial tissue in the nerves, and by the last-named the nerves were also found degenerated. Blocq,[46] who examined the peripheral nerves, both in the fresh state and after hardening, found nothing abnormal. Dana[26] also

27. Prager Ztschr. f. Heilk., December, 1892.
28. Jour. Nerv. and Ment. Dis., 1896.
29. Thèse de Paris, 1903. Abs. in Le Sémaine Med., 1903, No. 16.
30. Deutsch. Ztschr. f. Nervenhlk., 1899. Nos. 5-6.
31. Allbut's "System of Medicine," ix, p. 73, 1900.
32. Arch. f. Psych. u. Nervenkrankhl, 1898, p. 722.
33. Am. Jour. Med. Sci., 1899, p. 648.
34. Gaz. Med. de Paris, 1880.
35. Arch. de Physiol., 1872, No. 1.
36. Riv. di path. nerve. ment., 1899.
37. Den Fremadskridende Skjoelvelamhed, Hosp. tid. kjobenh., 1861, cited by Koller, reference, 16.
38. Wien. med. Wochschr., 1860, p. 406.
39. "Lecons sur le Systeme Nerv.," Paris, 1884.
40. "Charite-Annalen," 1876, p. 360.
41. Annalen d. stadt. allg. Krankenh. in Munchen, I, p. 124.
42. Diss. Paris, 1880.
43. Diss. Breslau, 1883.
44. Deutsch Arch. f. klin. Med., 1901, p. 193.
45. Rev. Neurolog., 1904, p. 394.
46. Manuel de Med., Debove Archard, 1894. Quoted by Raymond, reference 57.
47. Bull. Soc. Sci. et Med. de l'Ouest., xi, 104.

found them normal. v. Sass[17] found the perineurium and endoneurium thickened, and they appeared partially degenerated when stained by the method of Pal.

ORIGINAL INVESTIGATIONS: THE NERVOUS SYSTEM.

I have had the opportunity of examining the pathologic material from 14 cases of paralysis agitans, in 8 of which I was able to study the peripheral nerves and muscles and in 2 of them also the ductless glands. That 14 cases with necropsy is a very large number will be better appreciated when it is remembered that Gordinier,[33] writing in 1899, could find reported but 54 cases with necropsy in the whole literature of the disease, and of these only 24 had been examined histologically. The largest number of cases with necropsy reported by any single observer is 4. Details of the positive pathologic findings in 14 cases with necropsy, in 12 of which there is also given an abstract of the clinical histories, will be found in the appendix.

The ages of the patients at death, in the cases that I have examined, ranged from 45 to 75 years; the duration of the disease from two to twenty years.

Macroscopic examination of the central nervous system, including trans-sections, revealed lesions in only one case.

The tissues are preserved in formaldehyd solution (10 per cent.), or in Müller's fluid. In making the microscopic examination of the central nervous system pieces of tissue were taken from each paracentral lobule, the pons, the vermis of the cerebellum, the medulla oblongata and from the cervical, thoracic and lumbar regions of the spinal cord. The anterior and posterior spinal nerve roots from the lumbar and cervical regions were examined separately from the cord in 6 cases; the posterior root ganglia, from the lumbar region, in 2 cases; the peripheral nerves were examined in 8 cases. The pieces were dehydrated in alcohol in the usual manner, imbedded in celloidin, and the sections stained as follows: Thionin modification of the Nissl method for study of the nerve cells; the Weigert hematoxylin and the Marchi osmic acid for degeneration; the hemalum-acid fuchsin, and the Mallory neuroglia stains.

A summary of the findings in my cases shows that the most constant lesion was a fibrosis of the capillary blood vessels of the spinal cord, which by rendering them more prominent, caused an apparent increase in their number. The region of the posterior and lateral columns seemed to be the most affected. This lesion was present in eleven cases, in all of which it was an accompaniment of a general sclerosis of the blood vessels of the nervous system. The next most frequent finding was a diffuse overgrowth of the glia in the spinal cord, usually more marked in the posterior columns, in six cases. It was not confined to any system of fibers, and in but one case did it show the tendency to form islets about the blood vessels as described by Redlich.[24] In no case was it demonstrated that the neuroglia proliferation was more marked in the gray matter than in the white matter. The Betz cells of the paracentral lobules were considerably pigmented in many cases, but only in four cases was the pigmentation very marked, and in only two cases were there any distinctly degenerated cells. The motor cells of the anterior horns of the spinal cord were excessively pigmented in six cases; in four cases they showed distinct chromatolytic changes in some of the cells, but the loss of the dendritic processes, with a consequent lessening of the richness of the dentritic plexus, as described by Dana, was not observed. Recent hemorrhages into the anterior horns of the spinal cord were observed in two cases; they were probably agonal. The perivascular spaces were widened in four cases, and in five cases numerous amyloid bodies were seen in the spinal cord, especially in the posterior columns. The central canal was closed in eight cases, dilated in one case, double in one case, but probably these are to be regarded as normal conditions. The cerebellum, pons and medulla oblongata were practically normal in all the cases in which they were examined; a moderate sclerosis of the blood vessels and a slight subpial proliferation of the neuroglia not being considered pathologic when found in aged persons. In one case there was a round cell infiltration of the pia. The anterior and posterior spinal nerve roots in the cervical and lumbar regions were found congested in two cases, but not in any case degenerated. There was no degeneration of the nerve fibers of the cord in any case, but the neuroglia proliferation, in six cases, gave the posterior columns the appearance of staining lighter than the rest of the cord by the Weigert hematoxylin stain. The peripheral nerves were examined in eight cases; in two they appeared degenerated when stained by the Weigert hematoxylin stain; in two others there was a swelling of the myelin sheaths, accompanied in one case with swelling of the axis cylinders. The intramuscular nerves, even those within the muscle spindles, stained well with the Weigert hematoxylin stain. The nerves showed no degeneration when stained by the Marchi method.

DISCUSSION OF THEORIES OF THE NERVOUS ORIGIN OF THE DISEASE.

Many theories have been advanced as to the nature and location of a lesion in the central nervous system in paralysis agitans. Some have been purely hypothetical and based entirely on the clinical symptoms, others on the findings in the few cases examined by their authors. Gowers[31] expresses his view thus:

> Paralysis agitans must be regarded as a chronic senile change in the nutrition of the terminations of the branching processes of the dendrites of the motor nerve cells of the cortex causing constant liberation of nerve energy to be increased, and also causing a change in the form, uniformity gives place to rhythmical liberation.

Bychowski[32] and others hold similar views. The arguments advanced in support of this are: 1. A hemiplegic distribution of the tremor speaks for a cortical origin. Numerous cases have been reported in which the symptoms involved both arms or both legs, or in other words, were paraplegic. By Hart (l. c.) they were found to be as frequently paraplegic as hemiplegic. 2. The tremor ceases during sleep, i. e., when the function of the hemisphere is least active, but in cases in which tremor is known to be due to cortical involvement (case of Mills and Weisenburg, l. c.) the tremor does not disappear during sleep. 3. When a case of paralysis agitans in which all four extremities are affected develops a hemiplegia, the tremor disappears on the paralyzed side. Such cases are said to have been observed by Gowers,[31] Westphal[40] and Grashay.[48] This, if invariably true, proves that the nervous impulses which by their perversion cause the symptom originate in the cerebral cortex, but it does not prove where the perversion of impulse in this disease takes place. Whether in origin, transmission or in their reception ultimately by the muscle, the result of a complete cessation of the impulse would be the same. Hart reports a case in which the tremor did not stop on

48. Berlin klin. Wochschr., No. 30, 1885, p. 487.

the paralyzed side after a hemiplegia and was apparently unaffected by it.

Bychowski[32] adds the following reasons: 4. The not uncommon combination of insanity, hysteria or brain disease with paralysis agitans. Most authors regard this combination as decidedly uncommon. 5. The parasthesiæ and subjective sensations of heat and cold. These are generally considered as accompanying peripheral rather than cortical conditions. 6. The constant failure of any change in the sphincter reflexes. This is of some importance as differentiating a spinal from a cortical origin, but would have no bearing if the lesion is outside the nervous system. 7. The increased knee jerks. The knee jerks in paralysis agitans are too variable to be used as an argument on which to base a pathology of the disease.

Cuylits[49] considers the tremor of paralysis agitans as cortical in origin, and holds that the lesion consists of retraction of the dendritic processes of the cells and draws analogies to tremor seen in paresis, alcoholism, etc. There is no pathologic evidence to support the theory of a cortical origin for the disease except the findings of Philip.[30] Brissaud[50] believes that a lesion of the locus niger is the cause of the disease. Tremors are produced by lesions in this region, but they are different from that of paralysis agitans and are not accompanied by the other symptoms of the disease. Valery[51] considers that paralysis agitans is a syndrome due to a lesion in the mesencephalon, the syndrome being more or less complete, according to the extent of the lesion. However, lesions of the mesencephalon are not found at necropsy.

Ballet[52] and also Dana,[26] from pathologic evidence furnished by their own cases, place the chief lesion in the motor cells in the anterior horns of the spinal cord. Ballet,[51] as a breaking of the processes, particularly the dendritic processes. Dana[26] holds that:

> There is early functional disturbance and later a degeneration and destruction of the dendrites of the anterior horn cells which interferes with the even flow of motor impulses, and finally leads to motor weakness and rigidity, owing to the cell being practically cut off from the brain.

From a pathologic standpoint this theory is not confirmed by any other observer, although especially looked for in my cases. Clinically, it would seem that a tremor due to such a lesion, "which interferes with the even flow of motor impulses," would be rather of the intention type, and unlike that of paralysis agitans which momentarily disappears on voluntary movement.

Redlich[24] believes that the overgrowth of the neuroglia in islets about the blood vessels in the lateral and posterior columns of the spinal cord accounts for the tremor and rigidity on the grounds of a functional weakening of the nerve fibers in their vicinity, thus producing a special type of dorsolateral sclerosis. The rigidity of paralysis agitans, however, is very different from the spasticity due to lesion of the lateral column, and the pathologic findings of Redlich are not confirmed; indeed, are expressly denied by other observers (Dana[26]). I found a diffuse overgrowth of the neuroglia in the lateral and posterior columns in a number of cases, but not in the form of islets about the blood vessels except in one case.

Gordinier[33] explains the tremor and rigidity as follows:

> The characteristic symptoms of this disease are due to one and the same cause, namely, an irritation from the presence of an increased amount of neuroglia in the posterior columns producing an excitability of the reflex collaterals of the posterior nerve roots arborizing about the ventral cornual cells which results in an increase in the normal rhythmic discharges of energy from those cells, producing at first the tremor and later the rigidity.

Gordinier's case, the pathology of which is the basis of his hypothesis as to the causation of tremor and rigidity, was "a typical case without tremor."

Sander[8] thinks that the overgrowth of glia in the anterior horns by interfering with the connection between the upper and lower motor neuron, is the cause of the tremor and the difficulties in gait. He examined the central nervous system from cases of senility with and without tremor and also paralysis agitans; in the cases of paralysis agitans and in those seniles in whom tremor had been marked, he found a special predilection of the glia proliferation for the gray matter. This theory of Sander[8] takes no account of the clinical difference between paralysis agitans and senile tremor, and his pathologic findings lack confirmation.

From the above summary it will be seen how diverse and contradictory are the pathologic findings in the central nervous system in paralysis agitans, but the explanation for this is simple. Paralysis agitans is a disease that in almost every case begins late in life and is not rapidly fatal. There are changes which occur in the central nervous system, as they do in other parts of the body with the advance of years, changes that are well known, though perhaps not well understood, and which consist, to state it in a few words, of a gradual replacement of the parenchymatous structure by the connective tissue of the part, in the nervous system by the neuroglia. This change is modified, advanced or retarded, to an extent, by the mode of life, heredity, disease, etc. Arteriosclerosis is usually found at this period of life, and also the incidence of wasting diseases and malignant new growths, which, by their toxic influence, are known to produce degenerative changes in the central nervous system. These changes, the changes of senility variously modified by the other factors of which I have spoken, are the most constant findings in the central nervous system in paralysis agitans.

Many men (Wollenberg,[1] Campbell,[53] Nonne[54] and others) have found changes similar to those found in paralysis agitans, in the spinal cords of seniles who during life had shown none of the symptoms of that disease. To reconcile this similarity in the findings with such distinct clinical differences, it has been held that the lesions in paralysis agitans are of precocious onset and exaggerated intensity; such a view is held by Dubief,[23] Jacobsohn,[55] Borgherini[25] and Ketscher.[27] Against this, however, are the findings of Furstner,[9] who found no marked senile changes, Idelsohn,[45] and Schwenn,[44] whose patient died at 43½ years, and was therefore not a senile.

That paralysis agitans is but senility, even though a precocious or special form of senility, I believe, with Dana,[26] "is contrary to all clinical experience." The lesions of senility found in the central nervous system in many cases are but natural when we consider the age of the patient at necropsy, and the same lesions are found in many seniles not the subject of the disease; while in those patients who die at an earlier age these changes

49 Présse Med. Belge, Brussels, 1897, xlix, p. 121-124.
50. Jour. de Med. et de Chir. Pratique, 1894, p. 641.
51. Thèse de Paris, 1904, Abs. Rev. Neurol., 1905.
52. Bull. et Mem. Soc. Med. de Hôp. de Paris, 1898, xv, pp. 40 to 43.
53. Jour. Ment. Sci., Oct., 1894.
54. Deutsch. Ztschr. f. Nervenheilk., xiv, p. 193, 1899.
55. Berlin klin. Wochschr., No. 34, 1886.

are not found. Therefore, from a pathologic standpoint also, paralysis agitans and senility must be regarded as two different conditions.

THE CHANGES IN THE MUSCLES.

Oppenheim[56] gives as the characteristic symptoms of this disease: tremor, muscular rigidity, which produces a peculiar position of the head, trunk and extremities, retardation and difficulty in active movements and a peculiar modification in gait. The last two are the result of the former, so that really we have two, muscular rigidity and tremor. According to the same author, even the subjective symptoms are due to the muscular rigidity and limitation of active motility. Cases have been reported without tremor, so that it would seem that the muscular rigidity and its peculiar manifestations is the one absolutely characteristic symptom. This rigidity is very different from spasticity, it is not under the influence of the will, is not increased by passive movement, nor is it affected by the mental state of the patient, and it is constantly, gradually progressive, all of which speaks for a muscular affection. Blocq[46] was probably (so quoted by Redlich[24] and by Raymond[57]) the first to formulate the theory of a myopathy as the anatomic basis of the rigidity. He found distinct anomalies in the muscles; irregular atrophy and hypertrophy of the fibers, and proliferation of the sarcolemma nuclei. Joffroy[35] had already noted similar changes in the muscles, and Borgherini[25] had observed "that in the muscle the connective tissue was increased, the muscle fibers were all somewhat delicate and some were intensely atrophied, showing vacuoles and increase in the number of sarcolemma nuclei." Burzio,[21] Redlich,[24] Pierret and Vessele,[58] Wollenberg,[1] v. Sass[17] and others found similar changes in the muscles, and by Skoda,[4] E. Leyden[59] and Ketscher[27] these changes were found combined with a fatty degeneration of the muscles. Dana[26] found a fatty degeneration of the muscle which he decided could not be due to neuritis, for the nerve supplying that muscle was normal. In Gordinier's[33] case the muscle was apparently not examined, as he makes no mention of it, and this unfortunately is true in many of the cases reported with necropsy.

Schwenn[44] described changes in the muscles in his cases similar to those previously described, but called attention to the fact that the changes were not the same in all parts of the muscle, but were at various places at various levels. He comes to the conclusion, on the ground of his own investigation, that the basic anatomic change in paralysis agitans is a severe progressive disease of the muscle which gradually involves the whole musculature. He calls attention to the fact that evident changes are found in the muscles during life, and cites Blocq[46] and Borgherini[25] as having found changes in the electric irritability of the muscles. Mendelsohn[60] observed an increase in the latent period in the diseased muscles. Schwenn[44] also noted the resemblance to myotonia congenita, "in which many specific changes in the muscles are found," and also that the most common etiologic factors affect the muscles, trauma, strain, excessive use, etc. Schiefferdecker[61] by his very careful pathologic studies, in which comparisons were made with normal control tissue and all the factors of postmortem rigidity, method of hardening, etc., were taken into account, concludes that

> Both myotonia congenita and paralysis agitans are diseases of the sarcoplasm and fibrillæ of the muscles. In paralysis agitans, however, there is also a disease of the muscle fibers in the muscle spindles, although the nerve fibers both within and without the muscle spindles are normal.

Idelsohn[45] describes his findings in the muscles as similar to those of Schiefferdecker,[61] increase in the number of sarcolemma nuclei, hyaline degeneration, swelling of the fibers with vacuolation, etc., and concludes that the anatomic lesion of Parkinson's disease is in the muscles.

I was enabled to examine muscular tissue from 8 of the 14 cases with necrospy; in one other case a piece of muscle was removed from the forearm of a patient in the service of Dr. W. G. Spiller at the Polyclinic Hospital. The patient (E. W.) was 62 years old and had had paralysis agitans about three years. The symptoms of the disease were typical, but otherwise the patient was in good health, and the muscle was removed by me for the purpose of this examination only. I know of but two instances in the literature in which muscular tissue has been removed from the living patient for this purpose: DeBuck and DeMoor,[62] quoted by Raymond,[57] and Sanna Salaris,[63] "Note di istologia patologica (per biopsia) sulla fibra musculare striata nel morbo di Parkinson." The original of these papers in each instance is inaccessible to me. In all I have examined the muscles from 9 cases of the disease and pathologic changes were present in every case.

A summary of the condition of the muscles is as follows:

Many of the muscle fibers were swollen, and in cross-section were round instead of having the normal polygonal shape. There was a marked increase in the number of nuclei within the fibers, many of which were smaller, denser and rounder than the normal. These nuclei were frequently in pairs or in long chains. In several cases the fibers showed atrophic changes, and in these cases, usually of long-standing disease, there was an overgrowth of the connective tissue. In many cases the fibers had a hyaloid appearance and the longitudinal striations were unusually well marked, and in many of the fibers there was a tendency to longitudinal cleavage. In one case trichina spiralis was found in the muscle and in this case, in addition to the above described changes there was an intense interstitial myositis and also a discoidal degeneration of the muscle fibers. Muscle spindles were hard to find in the sections from any of the cases, but in those examined the muscle fibers within them showed similar changes to those surrounding them. The nerve fiber within the spindle was normal, and the intramuscular nerves showed no degeneration when stained with the Weigert hematoxylin stain. These pathologic changes were not of the same intensity in all the muscles nor in different parts of the same muscle.

My findings in the muscle agree generally with those of Schwenn,[44] Schiefferdecker,[61] and Idelsohn,[45] and indicate a definite and probably a specific change in the muscles in paralysis agitans, though the latter can not be regarded as proven. Schiefferdecker[61] regards the lesions as different from those due to overactivity of the muscle. v. Sass[17] examined the muscle of a normal individual 93 years old as a control, and

56. "Lehrbuch der Nervenkrankheiten," 4th ed., Berlin, 1905, ii, p. 1313.
57. Article by Raymond: Nouv. Icon. de la Salpêtrière, January, 1904.
58. Thèse de Lyon, 1881. Quoted by Raymond, reference 57.
59. Arch. f. Psych. u. Nervenkrankh., vi, 1876, p. 293.
60. Arch. de Phys., 1880, p. 218.
61. Deutsch. Ztschr. f. Nervenheilk., 1904, xxv, No. 1-4.
62. Annals de l'Soc. Med. de Gand, June, 1899. Quoted by Raymond, reference 57.
63. Riv. di Patol. nerv. e. Ment., August, 1895, p. 383.

found decided differences between it and the muscle in paralysis agitans. In paralysis agitans the fibers were filled with nuclei, and the small, round, dark-stained nuclei were particularly increased. In the muscle of old age there was an increased number of spindle-shaped and large oval nuclei, but the small dark nuclei were absent.

In a case of paraplegia due to peripheral obliterating arteritis in which I examined the muscles of the legs, I found differences from those in paralysis agitans in the increase of interstitial tissue and in the predominance of the rod-shaped nuclei over the small round nuclei. The fatty degeneration of the muscle fibers found by Skoda,[4] Dana[26] and Ketscher[27] was found by the last named also in several patients with arteriosclerosis. I found it present in a case of triplegia following hemiplegia reported by Dr. Charles W. Burr and myself before the American Neurological Association, June, 1906, and in this case it was regarded as due to the lack of nutrition to the muscles from shutting off of the blood supply by an intense peripheral arteriosclerosis. There is not enough known of the pathology of the muscles to say that these changes described are specific in paralysis agitans, but they are co-existent and probably co-extensive with the symptoms rigidity and tremor, though it can not be definitely proven that they are the cause of these symptoms. By some, the changes are regarded as caused by the tremor; the constant contraction of the muscle. But in studying the pathology of disease of other organs of the body we usually attribute the functional changes observed to the lesion that is found if that lesion is adequate to explain the symptoms.

Can we explain the symptoms of the disease by the anatomic findings in the muscles? The onset of the disease is usually gradual, with a gradual progression from muscle to muscle and from part to part, though it follows no regular course, sometimes being hemiplegic, sometimes paraplegic. In this it resembles the rheumatic joint affections more than any other disease, and indeed it has been supposed to be due to similar toxin. Occasionally the onset of the tremor is sudden, but this is explained on the theory of a muscular affection in the same way that a sudden onset is explained by those who hold the opinion that the disease is due to overgrowth of the neuroglia in the cord, etc., and that is that the prodromal symptoms had gone unnoticed. The most characteristic symptom of the disease is the muscular rigidity, and on this symptom most of the other symptoms depend. In the course of the disease it gradually increases and extends in limits so as finally to involve all the muscles in the body except the unstriated. It is not spasticity; the resistance is the same whether the limb be moved quickly or slowly. It has something of the complete loss of life or elasticity that is felt when a lead pipe is bent. I have found a quantitative change in the irritability of the muscle to the Faradic current in several cases in which the disease was of long duration. "The electric irritability is little affected except toward the end, when there is a quantitative change" (Wollenberg). This, however, is no argument against a local affection of the muscles, as in the muscular dystrophies the electric irritability is equally little affected. The tendon reflexes are usually normal in both diseases, unless the muscles concerned in the reflex become implicated, and the cases in which they are exaggerated in paralysis agitans really prove nothing, since seniles without symptoms of paralysis agitans often show increased knee jerks. All the clinical evidence points to the rigidity as being due wholly to an affection of the muscles. Actual paralysis is very rare in paralysis agitans, and when it occurs is usually limited to one muscle, as in the case reported by Moncorge[64] of complete paralysis of the right serratus magnus.

Schiefferdecker[61] and others suggest that the pathologic change in the muscle spindles is the anatomic basis of the tremor. It is a very important point that the changes in the muscles in paralysis agitans differ from those found in myotonia congenita only in an involvement of the muscle spindles in the former and not in the latter. Sherrington[65] says that the muscle spindles are undoubtedly sensory end organs, and Schiefferdecker[61] quotes Baum[66] as stating that they are organs of muscle sense. Langerhans[67] comes to the conclusion that they are organs of muscle sense, and that they cause or regulate the muscle tone. As it is generally admitted that the tremor in paralysis agitans is due to a pathologic condition which affects the neuromuscular mechanism that maintains muscle tone, the lesion of the muscle spindles affords a reasonable explanation of the tremor. Another important point tending to prove that there is a relation between the tremor and the lesion of the muscle spindle, and one that I have not seen noted elsewhere, is that the tremor almost always begins in the muscle where the muscle spindles are most abundant, and does not affect those muscles which contain no muscle spindles. Both Millbacher[68] and Frankel[69] found the muscle spindles to be most abundant in the muscles that move the thumb. Batten[70] found them most abundant in the small muscles of the hand and in the biceps. They were not able to find any in the diaphragm or in the masseter muscles. Siemerling,[71] in a case of gumma of the base of the brain, described a rather doubtful muscle spindle in the inferior rectus muscle in one eye, but neither Millbacher, Frankel, Batten nor Sherrington could find any spindles in the ocular muscles, though Sherrington found tendon organs there. William Hirsch,[72] writing on paralysis agitans in Posey and Spiller's "The Eye and the Nervous System, Their Diagnostic Relations," says:

> To the tremor would apparently correspond nystagmus, but this symptom has never been observed in paralysis agitans. This fact furnishes another proof for the assumption that nystagmus is produced by some central lesion and not by a disturbance in the general muscular tonus, because if the latter view were correct we would be bound to observe the symptom at least occasionally in paralysis agitans.

Inferentially, therefore, the tremor in paralysis agitans is due to a disturbance of muscular tonus, which is not operative in the ocular muscles, and the only apparent reason why it should not do so is because of the absence of muscle spindles. M. Koenig,[73] Debove[74] and Galezowski,[75] writing on the visual or ocular symptoms of paralysis agitans, describe rigidity of the ocular muscles and difficulties in movement due to this rigidity, but do not describe any thing that corresponds to the typical tremor as it occurs in the extremities. Batten[70] states that he could find no muscle spindles in the intrinsic

64. Lyon Med., No. 6, 1891.
65. Jour. of Physiol., 1894, xvii, p. 237.
66. Anat. Heft, 1900.
67. Virchow's Arch., 1897, cxlix, No. 1.
68. Deutsch. Arch. f. klin. Med., 1882, xxx, p. 304.
69. Virchow's Arch., 1878, lxxiii, p. 380.
70. "Brain," 1897.
71. Arch. f. Psych., 1888, xix, p. 401.
72. "The Eye and the Nervous System; Their Diagnostic Relations." Philadelphia, 1906, p. 477.
73. Bull. Med. 1893, p. 508.
74. Progrès Méd., 1878, No. 7.
75. Rec. d. Ophthal., February, 1891, p. 72; also Bull. Med., 1891.

muscles of the tongue. Forster[76] found them in the hinder part of the tongue, which muscles, when the two sides act in unison, protrude the tongue and draw it back. The usual tremor of the tongue in paralysis agitans on protrusion is a piston-like forward and backward movement, and thus here again the peculiar distribution of the muscle spindles bears an apparent relation to the muscles affected by the tremor. The tremor of paralysis agitans has certain peculiarities that are easily explained on the ground that it is due to an affection of the muscle spindles, and in much the same way as they are explained by those who hold that the lesions in the cord are responsible for the tremor. In either case it is admitted that the tremor is due to interference or a change in the impulses that maintain or regulate muscle tone, so that the tremor stops when the muscles are relaxed in sleep; or when a hemiplegia stops them completely on the paralyzed side; or when the impulse for a voluntary act supersedes, momentarily, the regular reflex.

Many of the symptoms of paralysis agitans are easily recognized as due to the muscular tremor and the muscular rigidity, such as the peculiarities in gait, the position, the facies, the ocular symptoms, etc. Other symptoms that are not so obviously due to the two primary symptoms are seen to be so on a careful analysis, thus Catola[77] comes to the conclusion that the salivation is due first, to tremor of the lips, cheeks and tongue; second, to rigidity of the same organs and of the muscles of the pharynx, with more or less complete interference with the movements of deglutition. The recumbent position of the patient permits the saliva to descend to the posterior part of the pharynx and so stimulates the reflex for deglutition. Other conditions often arise in paralysis agitans which are by some regarded as symptoms, but which might more reasonably be looked on as complications. M. A. Soques[78] has recently called attention to the syndrome of labioglossolaryngeal palsy occurring as a symptom of paralysis agitans, and quotes Bruns[78] as having found it in 4 cases in 74. There are not the characteristics of a true bulbar palsy, but rather a pseudo-bulbar palsy. Dejerine, in a discussion of this paper, considers the syndrome as a complication and called attention to the fact that many patients with paralysis agitans also have arteriosclerosis and are in a condition favorable for the production of a pseudo-bulbar palsy. The paresthesiæ, the sensations of heat and cold might well be considered as complications due to the age of the patient rather than symptoms of the disease. In an analysis of 219 cases, Hart[79] found sensations of heat in only 31, sensations of cold in 20, and both kinds in 20. Sensations of heat and cold are not at all uncommon in many people of advanced age.

It may be that the same factor which produced the changes in the muscles also makes itself felt in other ways, in producing a thickening or a loss of elasticity in the skin, for instance. Frankel,[80] in calling attention to the loss of elasticity of the skin in paralysis agitans, says "that perhaps the muscle fibers are altered by the same influence." A. M. Luzzato[81] found that in a case of paralysis agitans combined with a scleroderma, both were improved for a time by the administration of arsenic. A histologic examination threw no light on the pathogenesis of the condition, but he concludes that it was a double expression of one morbid state.

76. Virchow's Archiv., cxxxvii, p. 121, 1894.
77. Rev. Neur., 1905, xiii, p. 138.
78. Article by Soques, M. A.: Rev. Neurol., 1905, xiii, p. 135.
79. Jour. of Nerv. and Ment. Dis., 1904, v, No. 31, p. 177.
80. Deutsch. Ztschr. f. Nervenheilk., 1899, p. 430.
81. Il Morgagni, 1904, p. 753, abs. in Rev. Neurol., 1905.

THE PATHOGENESIS OF THE DISEASE.

Two general hypotheses may be considered as to the underlying cause of the changes in the muscles: First, there may be a primary degeneration of the muscles themselves, an abiotrophy, affecting the muscles analogous to that in the muscular dystrophies. Beginning in a muscle frequently after some slight local exciting cause, it gradually progresses from part to part. It may well be that people are born with muscles which lose their elasticity more quickly than the muscle of other people, either by use or through other causes that we know little about. The property of elasticity of a muscle has been shown experimentally to be lost by overextension and is subject to various influences.

A second hypothesis is that there is a toxin circulating in the body which causes these changes in the muscles. The idea of a toxin as the underlying pathogeny of the disease has been widely held. Dana[26] says:

> Perhaps the primary infection in paralysis agitans is some autochthonous poison allied to that of rheumatism; at any rate there is no other preceding history that is so often obtainable as that of rheumatism, and there are many facts in the clinical history of the disease which suggest a relationship between paralysis agitans and that form of rheumatic manifestation which is known as rheumatoid arthritis.

Spiller[82] has called attention to the points of resemblance between paralysis agitans and rheumatoid arthritis.

The examination of the excretion in paralysis agitans has produced some results of interest. Gauthier[83] found an increase of phosphoric acid in the urine in cases of paralysis agitans which suggested to him that the muscular changes may be due to an excess of the same in the muscles. His conclusions were that

> The symptoms are due exclusively to the changes in the muscular system and derived from the muscular rigidity. This rigidity, the most important phenomenon of the disease, is produced in the muscles without the intervention of the nervous system and is due to an excess of phosphates.

Cheron[84] had called attention in 1877 to the increased amount of phosphates in the urine, but by him they were considered as affecting the central nervous system, and so producing the symptoms of the disease. G. Gurtler,[85] C. A. Ewald,[86] Giovanni Setti[87] and Decombrel[25] found no increase of phosphates in the urine. Researches in the contents of the urinary excretion in paralysis agitans have also been carried out by Mosse and Bauel,[88] who found an increase of the completely oxidized phosphates, but a corresponding diminution in the incompletely oxidized; and by J. Leva[89] and R. Bandeio,[90] who found it negative.

In poisoning by phosphorus (Siemerling,[91] also Langerhans[67]), the muscle fibers within the muscle spindles are affected, as well as those outside, which is similar to the effect produced in paralysis agitans. It may be well here to call attention to the remarkable immunity enjoyed by the muscle spindle in various

82. Univ. Penn. Med. Bull., May, 1904.
83. Lyon Med., 1888, No. 35-36.
84. Le Progrès Méd., 1887, No. 48.
85. Arch. f. Psych., xiv, 1888.
86. Berlin. klin. Wochschr., 1883, No. 32-33.
87. Arch. Ital. di clin. Med., xxxvi, p. 262. Quoted by Schwenn, reference 44.
88. Rev. de Med., July, 1889, p. 583.
89. Deutsch. Ztschr. f. Nervenheilk., 1892, ii, No. 1, p. 75.
90. Gaz. hebd. de Sci. Med., de Bord., 1905, xxvi, 291-293.
91. "Charite Annalen," 1889, p. 443.

nervous affections, even when the muscle itself is severely atrophied or even in primary muscle affections, such as the muscular dystrophies. Roth[92] found them normal in a case of alcoholism, a case of progressive muscular atrophy, and in a woman who died of inanition consequent on a pyloric stenosis. Siemerling,[93] in a case of spinal neuritic muscular atrophy, in which he found an intense atrophy of the muscles and a complete degeneration of the intramuscular nerves, found the muscle spindle "entirely unchanged." Blocq and Marinesco[94] found them present in cases of poliomyelitis and polyneuritis when there was total degeneration of all the other muscle fibers. Spiller[95] found them normal in a case of intense progressive muscular dystrophy with contractures, in which there was no other normal muscular tissue. Grünbaum,[96] in a case of pseudo-muscular hypertrophy, with great changes in the muscles, found that both muscles fibers and the nerve within the spindles were normal. V. Horsley[96] found the muscle spindles merely shrunken after division of the nerve in dogs. This immunity of the muscle spindle in degeneration of the muscle consequent on nervous lesions and in the ordinary muscular dystrophies is in marked contrast to the decided effect produced by toxic substances, but there is not sufficient evidence, and what there is is too contradictory to uphold the opinion of Gauthier that the degeneration of the muscles and muscle spindles in paralysis agitans is due to phosphoric acid or one of its compounds. The idea that it is due to some toxic substance, however, receives confirmation.

Under the head of circulating toxic substances may be classed defective or changed internal secretions. Fibrous changes in the ovaries or testicles are regularly found at necropsy in cases of paralysis agitans, but they show no differences from the changes of senility, which in all probability they are. The extirpation of the testicles or ovaries produces no symptoms in any way similar to paralysis agitans, and the injection of such substances as Brown-Séquard extract, on purely empirical grounds it would seem is, so far as I know, of no benefit in this disease. Moebius,[97] in 1883 (quoted by Raymond[57]) reported a case of paralysis agitans combined with Basedow's disease and opined that paralysis agitans was due to an alteration in some glandular secretion. Lundborg[98] reported a case of paralysis agitans combined with myxedematous symptoms, and at necropsy found atrophy and cystic changes in the thyroid, which led him to believe that the thyroid gland plays an important part in paralysis agitans. Langerhans[67] found that in cretins there was a fatty degeneration of all the muscles except the tongue, cricothyroid, thyrohyoid, and rectus abdominus muscles which was similar to the general fatty degeneration of the muscles seen in phosphorus poisoning and in which the muscles fibers in the muscles spindles also took part. Askanazy,[99] in a pathologic study of Basedow's disease with special reference to the muscle changes in the disease, found that the muscles fibers were atrophied and had undergone a fatty metamorphosis, the striations were lost and the fibers appeared homogeneous, there was vacuolation of the muscle fibers and proliferation and degenerative changes in the sarcolemma nuclei. The muscles fibers in the muscle spindles showed the same changes as those about them. He noted a marked tremor of the hands in his case. Castelvi[100] reported pathologic alterations of the thyroid in two cases of paralysis agitans. There are several facts against any change in the internal secretion of the thyroid gland operating as the cause of paralysis agitans. The symptoms which accompany marked disease or even total destruction of the gland are not similar to those of paralysis agitans; Alquier[101] has examined the thyroid and adrenal glands from cases of paralysis agitans and found not the slightest alteration. In the two cases in which I had examined the thyroid glands there was a simple colloid degeneration in each case, not accompanied by gross enlargement of the gland, and probably a senile change. Thyroid therapy has generally been barren of results.

The numerous cases reported of a combination of paralysis agitans with symptoms of myxedema or Graves' disease and the fact that the muscle changes observed by Askanazy[99] are similar to those in paralysis agitans lead to the conclusion that there is some intimate relation in their causes and as a logical result to an investigation of the parathyroid glands. The parathyroid glands have gradually assumed a position of great importance in pathology since their discovery by Sandstrom. They were at first supposed to be accessory or embryonic thyroids. Welch (cited by Richardson[102]) considers that anatomically the parathyroid glands resemble the anterior lobe of the pituitary body, and that unlike the thyroid the presence of a colloid material in the gland is retrograde or degenerative in its nature. Richardson[102] quotes Gley, an early investigator of the subject, as holding the opinion, supported by physiologic experiments, that the parathyroids are glands *sui generis* and have a specific function related to that of the thyroids. That the removal of the thyroids in one case and the parathyroids in another produces very different results is also proven. In a personal communication Dr. W. S. Carter, now of the University of Texas, Galveston, from his experiments performed on dogs while at the University of Pennsylvania, concludes that "the parathyroids are more important than the thyroids, that the acute nervous symptoms in dogs which follow total extirpation of both thyroids and all four parathyroids are due to the removal of the latter bodies and not to the former. Total parathyroidectomy without thyroidectomy produces tetany and death just as certainly as the total extirpation of both sets of bodies. On the other hand, extirpation of the two thyroids, leaving one or two external parathyroids with the circulation intact may cause transitory symptoms from the accidental injury to the parathyroids at the time of operation, but I have had such animals live for months in perfect health. The subsequent removal of the remaining one or two external parathyroids would then produce the characteristic tetany and death within a few days." These results are in accord with those obtained by other investigators.

Richardson[102] gives the acute symptoms in a parathyroidectomized dog as tremor, rigidity, convulsions, dyspnea, and death. With due allowance for the sudden onset and complete removal of the gland in these experiments compared to the more gradual destruction of the gland by a pathologic process, from all the descriptions given, the symptoms presented by a parathy-

92. Centralbl. f. die med. Wissensch., 1887, p. 129.
93. Arch. f. Psych. u. Nervenkrankh., xxxi, No. 1-2, p. 105.
94. Soc. de Biol., 1890, p. 398. Quoted by Batten, reference 70.
95. Jour. Nerv. and Ment. Dis., October, 1897.
96. Brain, Autumn, 1897.
97. Memorabilien, 1883. Quoted by Raymond, reference 57.
98. Deutsch. Ztschr. f. Nervenheilk., 1901, xix, p. 268.
99. Deutsch. Arch. f. klin. Med., 1898, lxi, p. 118.
100. Riv. de Med. y P Cirugia practicas, Madrid, 1903; abs. in Rev. Neurol., 1904, p. 141.
101. Thèse de Paris, 1903; Rev. Neurol., 1904, p. 438.
102. "The Thyroid and Parathyroid Glands," Philadelphia, 1905.

roidectomized animal are very similar to those of paralysis agitans. In the picture of a monkey in this tetanic condition (v. Eiselsberg reproduced by Richardson[102]) there are seen many resemblances to the characteristic position of a patient with paralysis agitans: the head and back bent forward, the joints of the extremities in flexion, the general appearance of rigidity and even the ulnar deviation of the hands. So far as I know, Lundborg[103] in 1904 was the first to call attention to the resemblance between the symptoms of paralysis agitans and the effects of parathyroidectomy in animals, and he arrived at the conclusions that "paralysis agitans is probably a chronic, progressive hypoparathyroidismus." Berkley[104] also noted this similarity in symptoms and reports eleven cases of paralysis agitans treated with parathyroid extract, nine were benefited and he refers to one very early patient who considered himself cured. These results of Berkley assume more importance in throwing light on the pathogenesis of the disease when we recollect the uniformly discouraging results of treatment with the other glandular extracts. Neither Lundborg or Berkley had any pathologic evidence to support their conclusions.

I was able to examine the parathyroid glands from two of my cases, and in the opinion of Dr. Allen J. Smith, professor of pathology at the University of Pennsylvania, they were both in a distinctly pathologic condition. In one there was some colloid material which, according to Welch, indicates a degenerative condition, but in both these cases there was a peculiar infiltration with fat, especially in relation to the blood vessels. This pathologic evidence of disease of the parathyroid in paralysis agitans, when considered together with the experimental evidence quoted and the therapeutic results of Berkley, suggests that the parathyroid glands play an important part in the pathogenesis of paralysis agitans.

CONCLUSIONS.

1. Paralysis agitans is not a neurosis nor is it senility.

2. The anatomic basis of the symptoms, muscular rigidity, tremor, and the symptoms dependent on them, lies in the affection of the muscles.

3. The disease itself is probably a general toxemia and there is suggestive evidence that it is due to alteration in the secretion of the parathyroid glands.

I have to thank Drs. W. G. Spiller, Charles K. Mills, Charles W. Burr, James Hendrie Lloyd, Charles S. Potts, D. J. McCarthy, T. H. Weisenburg, and J. H. W. Rhein for referring to me the pathologic material on which this research is based, and especially to thank Dr. William G. Spiller and Dr. Allen J. Smith for verifying the pathologic findings.

DISCUSSION.

DR. D. J. MCCARTHY, Philadelphia, said that he does not agree with Dr. Camp in describing this condition as a purely muscular disease. While the theory, of course, of inelasticity of the muscles will hold good in certain directions, yet there are certain nervous manifestations which, he thinks, can not be explained by the condition of the muscles. The loss of elasticity, of course, will explain a decrease, but the reflexes are often increased, and it will not explain the tremor. It does not explain the sensory and trophic disturbances so often noted. The changes in the nervous system bear a more intimate relation to the disease than the changes in the muscles. In reference to Dr. Camp's statement that the disease is not one which occurs in the young, Dr. McCarthy recalled a case in which paralysis agitans developed before the patient, a man, was 30 years of age. The individual had worked in lead for many years from boyhood, and before the development of the disease he had extensive arteriosclerosis.

DR. C. D. CAMP, Philadelphia, said that the anatomic basis of the muscular rigidity and the tremor in paralysis agitans is in the muscles; as against this Dr. McCarthy has mentioned exaggeration of the knee jerks, but most observers are agreed that the knee jerks are generally normal in this affection. There is no reason why the same influence or toxin that produces the degenerative change in the muscles should not also produce secretory and other similar symptoms. The origin of this toxin is not known, but Dr. Camp called attention to the evidence which seems to connect it with the parathyroid glands, and to the very suggestive changes in the parathyroid glands found in his cases. The pathologic conditions in the central nervous system are the changes of senility; they are not constant in paralysis agitans, and they are found in old people who during life had none of the symptoms of paralysis agitans. It is generally agreed that the tremor in the disease is caused by some lesion in the neuromuscular mechanism that regulates muscle tone, but in sleep the muscles are relaxed and consequently the tremor stops. Muscle tone is increased on excitement, so is the tremor. It is evident that the cerebrum has a marked influence on muscle tone, but while such impulses probably originate there, the perversion which causes the tremor may be due to a lesion either in the spinal cord or in the muscles where they are received. There is no necessity for the perversion to occur at their origin; in order to act normally the impulses must be normally transmitted and received, but a lesion in the internal capsule by completely stopping all impulses naturally stops the tremor. This explains those cases in which a tremor affected all four extremities, but after the occurrence of the hemiplegia the tremor stopped on the paralyzed side.

103. Deutsch. Ztschr. f. Nervenheilk, 1904.
104. Med. News, Dec. 2, 1905.

ACUTE OTITIS MEDIA.*

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The various forms of otitis media depend not only on their varied etiology but also on their management and treatment. They depend also on the systemic condition of the patient as well as on the duration of the disease.

ETIOLOGY.

A few cases are the result of direct injury, but the greatest number are the result of a specific infection, and are usually secondary to some nasal or pharyngeal disease, such as catarrh, adenoids or Eustachian tube disease, which is usually secondary to nose or throat disease. Nasal obstruction is an extremely frequent cause of otitis media, because it interferes with the ventilation of the Eustachian tube, and stenosis of the tube means an inability of the middle ear to drain itself. By this means various bacteria, pathogenic and otherwise, gain entrance into the middle ear and set up an inflammation. Chilling of the body and ill advised baths, as river bathing out of season, is also a frequent cause of otitis media.

But besides the Eustachian tube there are two other ways by which bacteria may gain entrance to the tympanic cavity, namely, by the external canal through a perforated drum, and by way of the blood and lymph stream. The latter, however, is very rare, but sometimes occurs in syphilis. We assume and believe that every case of otitis media is the result of a bacterium of some

* Read before the Floyd County Medical Society.

kind. Bacteria may be found in any and all throats and noses, and yet if the Eustachian tube is healthy and properly performs its functions of ventilation and drainage, the middle ear is apt to escape injury, especially if there is no systemic disease to lower the local resistance. The systemic condition may influence the form of trouble as well as the progress and prognosis of the case.

Simple otitis media may result from any of the foregoing causes, and is known by the following pathologic conditions: swelling, redness, infiltration and exudation of the intra-tympanic mucous membrane and patches of broken down epithelium. The bony wall also partakes of this pathologic state. The exudate contains mucous, blood and sometimes pus and various bacteria and varies in color accordingly.

SYMPTOMS AND COURSE.

The important symptoms are paroxysmal pulsating pain in ear and face, worse toward evening; in children often accompanied by high fever, delirium and convulsions. On examination with the speculum or, what is better, Seigle's otoscope, we find the drum is red and bulging, if it is not badly retracted from former diseases. Especially is this true of its postero-superior-quadrant. As a rule, all the landmarks are obliterated except the short process which appears as a yellow spot. The hearing is rapidly impaired.

If the case runs a favorable course the pain and redness of the drum grow gradually less in three or four days, though the hearing may be unimproved, but recovery takes place in about four weeks. This condition is distinguished from myringitis by the greater impairment of hearing and increased tympanic distension. If it runs an unfavorable course it may last indefinitely.

TREATMENT.

In the acute simple otitis media this consists of aleviating the pain and treating the nose and throat with cleansing antiphlogistic agents, to facilitate drainage and ventilation to the tympanum by the Eustachian tube as soon as possible. The pain is best relieved by instilling within the external canal a 4 per cent. solution of cocain, preceding it with a douche of hot boric acid solution; having the patient lie on the opposite side to the one affected, and then applying heat and repeating the douche and cocain frequently if necessary. If the bulging of the drum and the pain increases after thirty-six hours treatment, then do a myringotomy and drain thoroughly, making the incision in the most dependent part of the bulged portion of the drum, which will usually be found in the postero-inferior-quadrant. Myringotomy can be done without pain after the instillation of a 10 per cent. solution of cocain with a 1-1,000 solution of adrenalin. If the drum is not incised it will finally rupture and slough with ragged edges and frequently does not close, leaving the ear exposed to the constant danger of infection. By relieving the intra-tympanic pressure and tension of the membrane by means of the incision the nutrition and reparative power of the drum are preserved, and, as any clean-cut wound will heal more quickly and surely than one made by sloughing, we shall, therefore, lessen the danger of permanent perforation. But more important than all, by early incision we lessen the danger of bacterial invasion of the mastoid cells with its consequent mastoiditis. The cavity should be evacuated and good drainage kept by aspiration and by douching with warm antiseptics. Hydrogen peroxid may be used as a cleansing agent and the ear mopped out with dry cotton until it is perfectly clean; then with a hand powder-blower fill the canal one-third full of boric acid and insert cotton. This treatment and dressing should be performed by the doctor or nurse, otherwise it is poorly done. When the discharge has ceased use 10 per cent ichthyol in liquid petrolatum instead of the powder and continue until the drum is healed, during which time the nose and throat must be constantly treated. We now begin with special measures to restore hearing, then after each nasopharyngeal treatment we practice Politzerization, which has for its special object free ventilation of the tympanic cavity. Do not depend on the family for any part of the treatment; if you do you will fail. If tympanic ventilation is interfered with by stenosis of the Eustachian tube it must be opened or closing of the drum will not take place, and then we must remove any and all naso-pharyngeal obstructions, such as adenoids, enlarged tonsils, septal spurs, enlarged turbinates, polypi, deviated septum, etc. If there is simply a Eustachian salpingitis we may have to resort to bougies. As these naso-pharyngeal abnormalities are the greatest cause of tympanic disease, as well as of many other troubles, it is far more expedient to remove them than to wait and only partially succeed in restoring the middle ear after it has been disturbed by these abnormalities. Every pathologic pharyngeal condition promptly treated as it arises will greatly reduce chronic middle-ear disease.

PROGNOSIS.

In simple acute otitis media the prognosis is good if the trouble is properly treated early and continuously. If it is neglected for two or three weeks it goes on to perforation, partial destruction of the middle ear, and may merge into chronicity. This, if it occurs, is troublesome to deal with and often involves the mastoid. In neglected perforative otitis media, which is apt to involve the accessory cavities and mastoid cells, we have a disease which is most serious, and yet parents, and sometimes physicians, will say, "Oh, the child will outgrow it, and you can't treat it successfully anyway." Why not say the child will outgrow a broken leg or a depressed skull or a cleft palate. It is nearly as rational. It is a formidable and difficult disease with which to deal, and owing to its intra-osseous location it becomes necessary to be persistent and aggressive and sometimes radical in its treatment, and often mastoidotomy is a conservative instead of a radical mode of treatment.

In cases of acute purulent otitis media and mastoiditis what are the purposes of opening the mastoid? First, to promote better drainage; second, to limit the extension of the infection; third, to remove necrosed bone and promote early healing. The indications for opening the mastoid in acute mastoiditis are: First, tenderness over the antrum, persisting for three days, after freely incising Shrapnell's membrane. Second, if the discharge from the ear suddenly grows much less while other symptoms remain, with an elevation of temperature, chills and sweats, denoting the opening up of the new channels and fields of infection. Third, a flow of pus too great to have been produced by so small a cavity as the tympanus, indicating invasion of the cells. Fourth, many surgeons regard a bulging of the postero-superior wall of the canal as a positive sign of mastoid disease and indicating interference; a few say it sometimes occurs with simple otitis media.

It seems rational to make it a rule to at least drain and remove necrosed bone in every case of true purulent mastoiditis, and although many cases recover without interference, it is certainly a long, tedious and dangerous route. To say the least, such patients should be under the immediate attention of a surgeon until recovery is complete. Like appendicitis, its progress is insidious and its ravages hidden to an ordinary observer, until the mastoid has been explored and if mastoid surgery fails, it is usually because it has been postponed too long or the exploration has not been thorough and some foci of infection have not been found. The way to success in otology is to never let an acute otitis become chronic.

As the general practitioner is apt to see the case first it behooves him to be vigilant and prompt in treatment and advice, so that no time be lost, for the earlier pathologic condition is much more amenable to treatment and yields a more pronounced success, while neglected cases last a long time and have an uncertain outcome.

DIFFERENCES IN THE PHYSIOLOGIC ACTION OF THE SALTS OF AN ALKALOID.*

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Whether or not all the salts of an alkaloid, when the differences in their solubilities are excluded, have the same physiologic action is a question which is usually evaded in text-books on pharmacology and therapeutics. It is the general opinion that all the salts of an alkaloid, in the doses in which they are ordinarily administered, do have, aside from the local effect due to differences in solubility, the same action. Cushny,[1] speaking of the excessively bitter taste of quinin, says that it may be prescribed as a salt of tannic acid. This salt is exceedingly insoluble and is consequently almost tasteless. The pure alkaloid may be advantageously used for the same purpose and for the same reason. Where a rapid action is desired, a freely soluble salt—as the hydrochlorid, the bisulphate or the hydrobromate—is usually employed. Such salts as the above are the ones which are usually chosen for hypodermic administration. The only questions considered are whether it is sufficiently soluble and whether it is non-irritating.

Such statements are a fair example of the ordinary text-book descriptions of the different actions and indications for the use of the various salts of an alkaloid. It is not uncommon, though, for a physician to use one salt of an alkaloid to the exclusion of all others, because he believes he gets better results with it, while another doctor may be of the same opinion regarding a different salt of the same alkaloid. One point which the average physician may tend to ignore is that when a definite quantity of the salt of an alkaloid is given, unequal amounts of the alkaloid are administered. For example, when one-sixtieth of a grain of strychnin hydrochlorid is administered, more of the pure alkaloidal strychnin is given than when a sixtieth of a grain of strychnin salicylate is dispensed.

I have long been of the opinion that it is probable, especially with those alkaloids which are administered in considerable quantities, that there are different quantitative effects depending on the acid with which the alkaloid is combined.

TABLE 1.

Solutions Used.	C.C. of Oxygen Freed in					
	M/8		M/64		M/512	
	2 m.	5 m.	2 m.	5 m.	2 m.	5 m.
Sodium nitrate	0	0¼	0	0½	4	7
Sodium chlorate	0½	1	1	3	3	5
Sodium formate	1	2	1	3	3	7
Sodium chlorid	1	3	7	15	14	33
Sodium fluorid	2	4	4	9	4	9
Sodium bromid	4	8	9	18	13	31
Sodium sulphate	11	24	12	25	14	32
Distilled water	14	33	14	33	14	33
Sodium sulphite	19	35	14	31	13	34
Sodium acetate	26	53	30	55	25	48
Sodium hyposulphite	30	60	20	42	14	33
Sodium succinate	31	60	32	55	16	36
Sodium tartrate	42	60	33	60	14	35
Sodium valerianate	42	60	39	65	24	50
Sodium butyrate	45	55	37	52	35	50
Sodium oxalate	40	70	44	65	12	33
Sodium citrate	42	71	45	75	14	38
Sodium phosphate	40	70	55	..	20	35
Sodium carbonate	50	..	50	..	40	70

TABLE 2.

Solutions Used.	C.C. of Oxygen Set Free in							
	N/100		N/500		N/2500		N/10000	
	2 m.	5 m.	2 m.	5 m.	2 m.	5 m.	2 m.	5 m.
Strychnin nitrate	2	15	4	20	5	25	6	30
Strychnin chlorid	8	36	8	38	9	40	8	37
Distilled water	9	36	..	..	..	..	..	..
Strychnin (purum)	..	..	11	42	8	36	9	37
Strychnin phosphate	10	38	10	39	9	36	8	36
Strychnin citrate	12	43	13	40	11	47	8	38
Strychnin sulphate	18	56	10	35	10	42	9	38
Strychnin arsenate	20	58	11	44	10	43	10	37
Strychnin valerianate	24	49	28	60	17	55	15	60
Strychnin salicylate	..	..	25	60	10	46	8	35
Strychnin acetate	35	70	29	58	13	41	9	36

TABLE 3.

Solutions Used.	C.C. of Oxygen Set Free in									
	N/100		N/500		N/2500		N/10000		N/25000	
	1 m.	2 m.	1 m.	2 m.	1 m.	2 m.	1 m.	2 m.	1 m.	2 m.
Caffein nitrate	..	..	..	..	1	6	5	18	7	25
Caffein sulphate	..	1	..	2	2	7	5	26	9	36
Caffein salicylate	..	2	..	6	6	30	8	35	9	37
Caffein bromid	..	1	1	5	5	25	7	30	8	32
Caffein chlorid	..	2	1	6	7	30	8	35	9	36
Caffein citrate	..	1	2	7	5	17	8	34	9	36
Caffein arsenate	1	2	3	7	6	32	7	33	9	36
Caffein benzoate	1	3	4	15	7	25	8	35	9	37
Caffein valerianate	2	12	6	26	8	34	9	36	9	37
Caffein (purum)	10	40	10	39	9	38	9	37	10	36
Distilled water	9	36	..	..	..	..	..	..	..	..

Apropos of some work[2] which I was doing with Nielson on the effects of various salt solutions on enzymatic and catalytic action, the various obtainable salts[3] of strychnin and caffein were also tried in the same way. In tables Nos. 1, 2 and 3 are given the results of a list of sodium, of strychnin and of caffein salts, respectively, on the splitting of hydrogen dioxid by a watery extract of kidney or pancreas. These tables are introduced for the sake of making a comparison of these results with those which are given in the experimental portion of the paper.

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* From the Department of Physiology of St. Louis University.

1. Cushny: Text-book of Pharmacology and Therapeutics, 3d edition, p. 368.

2. Nielson and Brown: Am. Jour. of Phys., vol. xii, 1904, p. 374.

3. Brown and Nielson: Ibid., vol. xiii, 1905, p. 427.

METHODS.

The easily obtainable salts of the alkaloids morphin, strychnin and quinin were used. The solutions were made in fractional normal concentrations. By this method a solution of every salt of an alkaloid, of a certain designated concentration, has the same amount of the free alkaloid as a solution of the same concentration of every other salt of the same alkaloid. For illustration, a N/1000 solution of quinin sulphate contains the same amount of the alkaloid as an N/1000 solution of quinin valerianate, notwithstanding the inequality in the molecular weights of sulphuric acid and valeric acid. The calculations of the molecular weights were made from the formulas given in Merck's (1902) Index.

The solutions were tested on paramecia. These animalcules were selected because they could be obtained in a reasonably pure solution. They are skimmed from the top of the solution in which they have been growing and are placed in a vessel with its greatest dimension in the vertical direction. Preferably a small-mouthed flask is used. The organisms are thus obtained in considerable numbers in a single drop from the upper layers of the solution in this vessel. In this way other organic material in the liquid was allowed to settle to the bottom and be separated from the paramecia. The organisms are of such a size that they are easily seen under the lower power of a microscope, and, since when alive they are always moving, their ceasing to move is a reliable index of the toxic effects of the solution. A simple unicellular organism of this sort gives more accurate results than a more complex organism would, as the possibility of chemical reactions of the alkaloid with elements of the organism are less likely to occur.

Into a flatbottomed saltcellar of about 10 c.c. capacity were placed 5 c.c. of the solution to be tested. The vessel was then placed on the stage of a microscope under a low power. One, two or three drops of the paramecia, depending on the number of organisms in a drop, were then put into the solution, which was instantly stirred. The exact time of the introduction of the drop of paramecia into the solution was noted.

It was easy to see through the microscope when the death of the organisms occurred. The testing of all the solutions in one concentration was carried out with the conditions constant throughout. The paramecia were taken from the same culture, the same number of drops were put into each solution, and each test was performed the same day and as nearly at the same hour of the day as was possible. In the instances where the drug did not act too rapidly each member of a series of tests was carried out at the same time.

EXPERIMENTAL RESULTS.

The results obtained in the various tests are indicated by tables Nos. 4, 5 and 6, the data of which were selected from the results of the numerous experiments performed.

Table 4 shows that paramecia are not very susceptible to the solutions of morphin salts. An exposure of 24 hours to the salts, however, suffice to kill the major portion of the organisms in any one of the solutions, except that of morphin acetate. There is noticed that during the first two hours' exposure of the organisms to the solutions many more have perished in one solution than in another. The toxicity of the morphin salts in solution in N/100 concentration increase as follows:

The least toxic is the acetate, followed by the valerianate, ferrocyanid, tartrate, bromid, sulphate, phthalate and meconate, in the order named. By reference to the table the exact relation of one solution to the other can be discerned.

TABLE 4.

Solutions and Concentrations Used.	Percentage of Paramecia Dead.				
	2 hrs.	3 hrs.	7 hrs.	12 hrs.	24 hrs.
n/100 morphin acetate	0	2	5	5	5
n/100 morphin valerianate	5	40	90	98	100
n/100 morphin ferrocyanate	5	60	90	100	100
n/100 morphin tartrate	10	80	95	100	100
n/100 morphin bromid	20	40	60	95	100
n/100 morphin sulphate	60	90	98	100	100
n/100 morphin phthalate	80	95	99	100	100
n/100 morphin meconate	90	95	99	99	100

Table 5 presents some striking results. Paramecia were killed almost instantly when they were put into a solution of an N/50 concentration of strychnin valerianate, but lived for a period of twelve minutes in the same concentration of a solution of strychnin hyposulphite. The other salts of this alkaloid in solutions of the same concentration, when their relative toxicity for paramecia is considered, fall in between the two mentioned. A reference to the table reveals the position of each salt. In the N/100 concentration, the salts remain in the same order, and the only variations noted are that each requires a little longer time to produce the death of the organism. Strychnin iodide in N/200 concentration is fatal to the paramecia in three minutes, while strychnin salicylate, in the same concentration, is fatal in seventy seconds.

TABLE 5.

Solutions Used.	Number of Seconds Paramecia Lived in Concentration of	
	N/50	N/100
Strychnin valerianate	5 sec.	....
Strychnin acetate	5 sec.	30 sec.
Strychnin nitrate	45 sec.	60 sec.
Strychnin chlorid	65 sec.	80 sec.
Strychnin sulphate	70 sec.	120 sec.
Strychnin bromid	75 sec.	150 sec.
Strychnin arsenate	90 sec.	300 sec.
Strychnin glycerophosphate	110 sec.	480 sec.
Strychnin phosphate	140 sec.	900 sec.
Strychnin citrate	180 sec.	1200 sec.
Strychnin hypophosphite	720 sec.	....

Table 6 shows there is a wide variation in the toxicity of certain quinin salts, as, for instance, the salicylate and the dibromid. The former acts twenty-four and a half times (figures taken from column No. 3) as rapidly as the latter. The other salts experimented with fall in between these two extremes. The first, second and fourth columns, each representing experiments with paramecia from different cultures and at different times, show slight variations in the relative toxicity of certain salts, but there are no very wide discrepancies.

The changes induced in the paramecia by the alkaloidal salts are characteristic. The organisms which normally are oblong, soon after being put into the solution of a rapidly acting chemical, become nearly round or spherical. The protoplasm becomes coarsely granular and its refractive power for light is consequently increased in some places and decreased in others. This change simulates very closely the one produced in the same organisms when they are deprived of oxygen, as observed by Loeb and Hardesty,[4] and Budgett.[5] These

4. Loeb and Hardesty: Archiv. f. d. ges. Physiol., lxi, 1895, p. 583.
5. Budgett: Am. Jour. of Phys., vol. i, 1898, p. 210.

changes come on quickly or slowly after introduction of the paramecia into the solutions, depending on whether the chemical killed the animalcule quickly or after a considerable period.

TABLE 6.

Solutions Used	Time Paramecia Lived in Concentrations.			
	N/100 Sec.	N/200 Sec.	N/1000 Min.	N/1000 Min.
Quinin salicylate	..	..	8	..
Quinin citrate	..	..	9	..
Quinin valerianate	10	10	14	2
Quinin sulphate	..	30	16	1
Quinin ferrocyanid	..	..	16	..
Quinin iodid	30	45	19	2.5
Quinin lactate	30	37.	20	4
Quinin phosphate	..	90	20	10
Quinin acetate	..	30	22	2
Quinin chlorid	30	30	23	2
Quinin bromid	15	10	23	2
Quinin hypophosphite	30	15	24	8
Quinin arsenate	..	45	35	1
Quinin sulphochlorid	120	180	82	23
Quinin dichlorid	10	10	87	30
Quinin ditartrate	..	450	97	32
Quinin sulphophenylate	150	540	105	32
Quinin disulphate	120	330	125	25
Quinin dibromid	..	120	196	33

It was a rather interesting fact that the paramecia of the same cultures and of different cultures varied considerably in their degree of susceptibility to any one solution. This is shown by the third and fourth columns of Table 6. In one instance an N/1000 solution of quinin sulphate killed the organisms in one minute, while in the case of paramecia from another culture sixteen minutes were required to destroy them.

The variations noted among the individuals of one culture were especially marked in case of those solutions which required a considerable period to produce their complete toxic effects. In those solutions which acted rapidly the variations in susceptibility of the organisms were scarcely noticed at all. For this reason those alkaloids whose salts were usually very soluble were used in fairly concentrated solutions. Many of the salts of quinin, however, are only slightly soluble.

EXPLANATION AND DISCUSSION OF THE RESULTS.

On first thought it might seem possible that the results are due to an error in making up the solutions, since such very small amounts of an alkaloid exist in a few c.c. of even the more concentrated solutions used. The solutions were all made, however, with great care. The fact that there are much wider variations in toxicity between solutions of two salts of the same concentration than there are between two widely different concentrations of one alkaloidal salt is conclusive evidence that the results are in no great measure due to any error in the making up of the solutions. For example, a N/100 solution of strychnin acetate is fatal to the paramecia in five seconds, while a N/100 solution of strychnin citrate kills the organisms in three minutes, and a N/200 solution of strychnin acetate requires only thirty seconds to produce the death of the organism. The latter solution contains just half the amount of the pure alkaloid in either of the two former and yet it kills the paramecia in one-sixth the time required by the strychnin citrate.

This is also noticed with many of the other solutions. That the reaction of the solutions is not accountable for the result was shown in the case of the quinin salts, where very careful tests of the reaction were made. Solutions of the other alkaloidal salts are practically neutral. The double salts of quinin are neutral, and yet considerable variation in the action of these salts is found. Most of the other salts of quinin are very slightly alkaline, and each has practically the same amount of alkalinity. Distinct variations in the toxicity of these salts is also observed. It is an interesting fact that the double salts of quinin are less toxic for paramecia than the others. This is noticed by referring to Table 6.

By a comparison of Tables 1 to 6, inclusive, some interesting relationships are revealed. For instance, sodium valerianate stimulates the splitting of hydrogen dioxid into water and oxygen by kidney extract very markedly; strychnin valerianate also has a decidedly accelerating action on the hydrolysis. None of the caffein salts increase the amount of oxygen given off from the peroxid of hydrogen, but caffein valerianate allows more than any other salt. The valerianates of quinin and strychnin are the most toxic of the salts of these alkaloids for paramecia. The acetate is found in each instance close to the valerianate. Strange to say, the valerianate and acetate of morphin, instead of being the most toxic of any of the salts, as is the case with strychnin and quinin, are the least toxic of the salts employed. The citrate stands close to the acetate and valerianate in every case except the strychnin citrate when used on paramecia. In this instance, instead of being very toxic, as would be inferred from its effects on the catalysis, it is one of the least toxic of the strychnin salts. The citrate of morphin was not worked with. Very likely other analogies would have occurred had the salts of the same acids been used in each instance. Further experiments must be done along this line with an idea of the comparisons.

SUMMARY AND CONCLUSIONS.

The acid with which certain alkaloids, strychnin, quinin and morphin, are combined alter decidedly the pharmacologic action of the alkaloid—at least in regard to their toxicity for paramecia.

The most toxic salts of strychnin and quinin are in some instances at least those which stimulate catalytic processes the most markedly. The salts of morphin with the smallest degree of toxicity, in some instances at least, are the salts of those acids, the sodium salts of which stimulate the catalysis the most markedly.

NOSTRUMS AND PROPRIETARIES VS. U. S. PHARMACOPEIA AND NATIONAL FORMULARY PREPARATIONS.*

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The title assigned to this article implies a contest or a trying, not, as I understand it, a test of the relative merits or values of the several classes of medicines, enumerated from a pharmacologic, pharmaceutic or even a therapeutic standpoint, but a test of their respective merits or values rated by their effects on the progress, utility and characters of medicines and pharmacy.

That proprietary medicines, some of them veritable nostrums, are in active competition with regularly authorized and open formula preparations for the patronage of physicians is abundantly proven by the oft appearing detail man, by the prodigious amount of mail received by physicians and by the teeming advertising pages of medical journals.

* Read at a joint meeting of the Section on Clinical Medicine and Surgery of the Baltimore City Medical Society and the Baltimore Branch of the American Pharmaceutical Association, Baltimore, Nov. 16, 1906.

That these same proprietary and often times secret formula preparations have already won considerable favor with physicians is unmistakably shown by the figures presented here to-night, by frequently appearing statistics of a similar character and by the personal knowledge of all concerned.

USE OF PROPRIETARIES BY PHYSICIANS.

The use of proprietaries by physicians is not altogether new; fifty or sixty years ago it had hardly begun, but its gradual, rather rapid increase is shown by the results obtained from an examination of 1,000 prescriptions in 1859, 1,000 in 1879 and the same numbers in 1899 and 1905, respectively. The percentages of proprietaries presented in these different periods were, in order, .1 per cent. (1 in 1,000), 8 per cent., 18 per cent. and 21 per cent. As tabulated, these figures represent such products only as have no really legitimate excuse for existing and do not include prescriptions for definite chemicals, although such may have had restricted ownership. The figures may be advantageously used as a means of comparison, because, fortunately, they were compiled, consistently, by one person and because they came from the same location, where were the same class of physicians and patients throughout all the different periods; periods previous to the agitation, lately prevailing and still active. An examination of two series of 500 consecutive presciptions showed 21 per cent. of proprietaries in 1905 and 18 per cent. in 1906, a decrease of 3 per cent. It seems only fair to state that in these 18 prescriptions in a hundred, proprietaries did not always appear alone, but in a large number of cases were in combination or were used as vehicles (elixir of lactopeptin and Fairchild's essence of pepsin with other proprietaries of the same nature taking the lead). The frequent use of proprietaries, as vehicles, pure and simple, is significant and should make its impress on those in charge of the revision of the Pharmacopeia and the Formulary.

The reliability and consistent relationship of these figures is interestingly confirmed by an examination of the same numbers of consecutive prescriptions written in 1904 on the files of another store, located several blocks away, where different customers and many different physicians were concerned. Here, it appears, about the same percentage of proprietaries was used, 19 per cent., and about the same conditions regarding combinations and vehicles prevailed, but the percentage of physicians not using proprietaries, at all, was larger, 72 per cent., as compared with 57 per cent. and 64 per cent., respectively, in 1905 and 1906 at the other pharmacy. It may be interesting to learn that 125, 115 and 107 were the respective numbers of different physicians writing the several series of 500 each.

OBJECTIONS TO PROPRIETARIES.

At this point it may be very properly asked: What are the real objections to proprietaries, secret formula products, after all? There is really no great objection to them, *per se*, if no better knowledge of medicines than is had of them is required, or if something better is not desired. Indirectly, however, they are very objectionable; possibly most objectionable because they are, verily, in direct opposition to the liberal and benevolent principles on which true medicine and true pharmacy are based; because they are in direct opposition to real science and to truth itself, making whatever error that follows such objections a natural consequence; their use encourages or falsely rewards pretense and makes a market for wrongly or dishonestly appropriated current knowledge; their use affords no encouragement to true and advanced pharmacologic and therapeutic attainments and certainly makes impossible that often very desirable and special adjusting of remedy and dosage, that is reasonably consistent with the extremely precise methods employed in all other departments of medical and surgical practice.

The development of science has, as is well known, in a number of instances, proven the worth or falsity of prevailing empiric practices, and so the very latest developments may prove, with startling exactness, just why some private empirical compounds have been efficacious in many cases and strangely disastrous in others. This, it is ventured, will be found due to the presence of the supposedly secondary and what has heretofore been considered a mere pharmaceutic agent, which in Pharmacopeia and National Formulary preparations is known and may be reckoned with. But who will be able to estimate the action of the hidden agent in proprietaries, which often times is the very "trick" on which depends their commercial value. It is open to every physician to know that ammonium acetate in large excess and ammonium chlorid in considerable quantity are constituents of the well-known Basham's mixture. And who is prepared to say just now that the effect of ammonium chlorid on blood coagulation is entirely different from the effect of calcium chlorid? Yet, certain we are that ammonium chlorid is present. Few physicians, however, know that the most popular proprietaries, supposed to contain a combination of peptone or albumin with iron and manganese, also contain large quantities of citrates; quantities often much in excess of an amount actually needed to keep the so-called peptonate of iron in solution. The citrate, either of ammonium, potassium or sodium, is used; the agency of either one of these is necessary to preserve the combination of iron and peptone in solution and, seemingly, the smallest quantity of sodium citrate that is efficient is not less than 7.5 grains per fluid ounce. When it is remembered that much larger quantities are used in some of these proprietaries and that an ounce is directed to be taken at a dose, it can be readily seen that the effects of these alkaline citrates must be thought of; especially in view of their effect on blood coagulation. It may be further stated that when these citrates are not used, hydrochloric acid is employed and necessarily breaks up the organic combination and forms a simple solution of iron chlorid, mixed with a solution of peptone. The official elixir of iron, quinin and strychnin phosphates presents these agents as true phosphates held in solution by the presence of the secondary or pharmaceutic agents, sodium citrate and ammonium acetate, but no medical man has been informed that some of the private formulas, for proprietary elixirs of the phosphate of iron, quinin and strychnin produce, as has been repeatedly proven, elixirs of the chlorids of these substances. The National Formulary elixir of pepsin, bismuth and strychnin presents these remedies in the logical, slightly acid form, while the examination of private formula, proprietary elixirs of this kind often discloses the fact that the bismuth is held in solution through an excess of alkali at the expense of pepsin and with the possibility of it precipitating the alkaloid strychnin.

Recent publications by the Council on Pharmacy and Chemistry of the American Medical Association make confirmatory and often times surprising revelations and it appears that even though a manufacturer of unfor-

tunate compounds may by intention be honest he is frequently mistaken, badly mistaken, not only in the pharmacology of his product but in its chemistry as well, as these same publications, to be charitable, make it plain that many of the proprietaries offered must be both owned and promoted by the veriest laymen, since these in their unfortunate and unbecoming ignorance use strictly chemical terms and graphic chemical formulas to describe a simple mixture. "Horrible examples" of the personnel of proprietary ownership and exploitation would be a show that would, in misfits and *mesalliances*, rival "the greatest on earth."

Uncertainty, unreliability, pretended originality and false claims of unusual potentiality are the really hurtful, harmful objections to these proprietary medicines which, because of these very characteristics, become veritable nostrums. The objections, from an ethical or professional point of view, so well known to all of us, while not, perhaps, directly destructive, are far reaching in their retarding effects on the advancement of pharmaceutic practice and on the integrity of pharmacists. Few men among us seem able to resist their seductive influences which so often tend and lead toward quackery.

I have in my possession two advertisements directed to the laity in lay publications, one that of a New York pharmacist of unusual scientific attainment and at one time the chief exponent of ethical pharmacy in the metropolis, the other that of a Baltimorean, a former retail pharmacist. Both take their products, originally presented to physicians for their sole use, directly to the laity and claim for their products the endorsement and patronage of physicians. Apparently, forgetting there ever existed anything like ethics and yet, knowing them as I do, I believe they were perfectly sincere and honest when they first presented their products to the medical profession. I believe the promoters of the hybrid-named, antagonist to pain proprietary which has now become a "family remedy" advertised to the laity were as sincere and as honest in the beginning. None of these would have been tempted by Pharmacopeia preparations, none could have gone to the laity with National Formulary products, and yet those demoralizing products are not one whit better than these.

The unfortunate, detracting associations which these proprietaries and many times nostrums make for medicine and medical men, are neither edifying nor helpful! Look in the display windows or over the advertising lists of dealers in quack remedies and "patent medicines" and you will be unable to differentiate between the rankest of these and the proprietaries, regularly prescribed by many of our most reputable physicians. Your "favorite" proprietary prescription is often seen standing close beside Dr. Pierce's Favorite Prescription, with old mother Pinkham and Peruna's handsome belle doing the honors to both with equal deference. It is not in such company, it is our proud pleasure to note, that we find chaste and fair maidens, the inevitable offspring of our most creditable national standards.

IGNORANCE, INDOLENCE AND LUST.

While regarding medicine with reverent respect, may it not be said that even it suffers much from such associations and may it not appear that because the mother's or mistress' skirts have been touched at all the daughter's or the handmaiden's may have become sensibly soiled. The most hopeful moralist must be he who, in his philosophy, reduces the initial causes of evil to the smallest possible number. And he who believes all can be traced to three, ignorance, indolence and lust, sees promise in the possibility of lessening any of the three.

In this instance it may be polite to modify the terms and say that it was ambition, not lust, that has led all sorts and conditions of men to present to physicians for their patronage the multitude of proprietaries and nostrums now afflicting us; that it was want of thought and lack of special training, not ignorance, that made it possible for the exploiter to have his extravagant claims accepted and his impossible promises credited; that it was the physician's lack of time and love for facility, not indolence, that has led him to use ready-made and easily ordered proprietaries.

And on this same occasion and for the same polite reason it may be well to say that it was want of interest and lack of opportunity to equip himself, not ignorance, that prevented the average pharmacist from being able to impress physicians with his ability to meet their pharmaceutic needs in an up-to-date manner and equal to the promoter of proprietaries; it was love of ease and fear of exhaustion, not indolence, that has kept the pharmacist from selling official and semi-official products in competition with proprietaries.

It matters but little under what head of human weakness we may classify the causes already enumerated; in any event, they must be charged to individual shortcomings, from a higher viewpoint, inexcusable and as requiring individual correction. There are, however, other causes for present conditions for which, it may be said, individuals are not responsible, but which must be laid at the doors of organization, association and education: an insufficient number of official, acceptable and efficient vehicles; the insufficient teaching of materia medica and pharmaceutical chemistry in medical schools; the sacrifice of true pharmaceutical discussions and demonstrations to purely commercial questions in pharmaceutical societies; the lack of a distinct understanding between the manufacturer and his legitimate distributor, the retailer, whereby the scope of each might be defined and the beneficial possibilities of each might be furthered; a lack of general and enthusiastic interest in the construction of the two standards, followed by a want of familiarity with their contents by all concerned; the slow revision and publication of the Pharmacopeia and the Formulary; the lack of frequent supplemental publications of corrections, improvements and additions. These are some of the causes with which we must reckon in our several guilds and institutions of learning.

In this land of the free and of great personal liberty we may not hope to accomplish so much as has been done in Europe by the hard hand of the law, except from its educational power, but here it is from the kindlier offices of affiliation and fraternity, of encouragement and helpfulness from the stronger to the weaker, that we must look for betterment and for final salvation.

Water Supply of Damascus.—The *Lancet* states that the water supply of the city of Damascus, Turkey, is very unsatisfactory. The city is provided with water from a distant source, which, before it arrives for distribution at Damascus, runs through plains, valleys and villages, and in its course becomes contaminated by many and various impurities. In the city itself, the water receives many new impurities in passing from house to house, and this explains the prevalence of typhoid in the city. It is now intended to remedy this dangerous state of affairs. Water from the same source will be used, as that is perfectly pure, but a system of iron pipes will be provided and other general measures taken to make contamination impossible.

THE MODERN SURGEON: HIS BENEFICENT AND EVER-EXPANDING WORK.

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I have selected the descriptive term "beneficent" not so much in contradistinction to a class of work that might be considered ill advised, rash or meddlesome nor as an insinuation that improper motives occasionally sway the actions of members of the profession, but because I have been impressed by the happy results of surgical intervention as a life-saving measure, while, on the other hand, I have witnessed the direst disaster following the failure to resort to it. The opinion prevalent among the laity that a surgeon delights in the opportunity "to cut and to slash," as they express it, is not justified by the facts.

The last ten years have wrought a considerable revolution in this respect, since the doctrine of conservatism has been extensively preached. One can judge how radical this change is by the tone of many of the prominent articles in the late periodicals and the transactions of well-recognized medical associations. Take, for instance, the discussion at the meeting of the American Gynecological Society, last May, by such well-known specialists as Baldy, Goffe and others on the subject, "Is Gynecology Dead?" whereas previously the suspicion of overdone work, if any existed, was directed to this particular field. Then the general surgeon was justly jealous of the encroachments on his domain by the gynecologist.

My many years of uninterrupted devotion to the profession have begotten an abiding faith in its high purposes and aims; so that any rare instance of unnecessary interference on the part of the surgeon I class as one of those unfortunate events incident to all great movements.

While each separate branch of medicine has its attractions, and, therefore, its votaries and its advocates, the science of surgery ranks second to none, if, indeed, it does not have priority over all cognate departments. Its results are usually so prompt and ofttimes even brilliant that it is highly gratifying to the earnest surgeon and eminently satisfactory to the patient. While the internist must often wait and hope for results, the surgeon strives and brings them to pass. The most marvelous transformations in the appearance and well-being of any individuals that I can now call to mind have occurred in those desperate "stomach cases," in which a wan, emaciated, miserable individual, apparently on the verge of dissolution, on the third day after a gastroenterostomy will have an expression of contentment and happiness that will do any one good to see.

Surgery is both a science and an art. Only a few weeks ago some writer said that probably this art had reached its zenith. About eight years ago I ventured the same opinion in a paper prepared for the Mississippi Valley Medical Association, saying: "The art of surgery, the manipulative skill, the operative faculty, has probably reached its summit;" but since then I have had the good fortune to see the leading surgeons in both Europe and America at work, and I feel sure they are even more adroit and expert than at the time I wrote. I have also had the opportunity of comparing two of our leading surgeons with themselves for two consecutive years, and I am convinced that there has been an improvement even in their operative skill.

But the science of surgery is practically without limit. Possibly the next decade may open up another avenue of progress equal in importance to the period which evolved and almost perfected asepsis and antisepsis.

If any one accomplishment in surgery can be rated above another it is the ability to make a diagnosis both early and accurately. The importance of diagnosis can not be overestimated. So often, when a case is brought to him, the specialist is hampered by the advanced stage of the disease, owing to a failure on the part of some one to recognize the gravity of the situation. It should be the ambition of every physician to excel in this line, but this condition will be attained only by study and experience. The constant and habitual exercise of the sense of touch, especially as regards the internal organs —the dexterity in palpating and auscultating—should engage the earnest attention of all. One afternoon, in St. Peter's, I expressed to Hurry Fenwick my surprise at the readiness with which he made the diagnosis of diseased kidney. It was before the attention of the profession had been drawn so specifically to that region. His reply, "Why, only a little practice makes it easy," encouraged me to form a habit when going over a patient —even though I suspect nothing—to investigate carefully this particular organ merely to retain the "touch" that practice has enabled me to acquire. These early diagnoses do not simply redound to one's own credit and the good of the patient, but they greatly enhance the value of surgery generally. I am not prepared to go to such an extreme as to state that an exploratory incision for the sake of diagnosis is a reproach to a surgeon, because it is well known that even the most skilful can not tell exactly what he will find within the abdomen, but it is evident that each year makes it more akin to a reproach.

At first the surgeon had only a knowledge of gross anatomy, but finally this knowledge led "to the unfolding of minute anatomy and pathologic anatomy. On this foundation was erected the splendid structure of surgical pathology and bacteriology. Previous to this time surgery, like law, was taught and practiced largely by precedent. Surgical pathology and bacteriology transformed the old anatomic surgery. Along the line of pathologic physiology the next great advances in surgery will probably be made."

Surgical education in these days of progress is not complete without an extensive knowledge of practical pathology and surgical physiology as pertaining to glandular and lymphatic action. This fact is made more and more conspicuous in the principal clinics in the large centers. The simple fact that the small intestine carries only liquid stools and that the large bowel is the drying house, as it were, of the alimentary tract has already suggested some recent theories in the treatment of surgical diseases of the abdomen. Ochsner's brilliant results in appendicitis by keeping food out of the stomach and feeding by rectum led to special investigation and research by other observers, and it was decided that when full or even partly filled the small bowel immediately begins its excursions to and fro within the abdominal cavity — its vermicular movements — and thereby scatters infection broadcast; that when empty it is quiet and, therefore, not an element of danger. Surgery quickly takes advantage of this in that after an operation it advises covering the field carefully with omentum as a protection against the migratory movement of the small intestines, or to utilize some fixed portion of the large bowel—the sigmoid for instance—as a safeguard by placing it against the stump or field of operation. It is well when operating in the abdomen to take into consideration the facts that "granular mat-

ter and coarse débris are absorbed only through the lymph spaces at the diaphragm, while the fluids are rapidly absorbed by the peritoneum, that there are three cavities of the peritoneum to be drained, viz: the right and left flanks separated from each other by the spinal column and the pelvis separated from the flanks by the psoas muscle. Either flank holds more fluid and is an inch deeper than the pelvis. The body must be elevated to an angle of sixty or seventy degrees to drain properly by Fowler's position. The entire cavity can be drained by gravity by a lateral position."

The surgeon is forced to a thorough study and appreciation of the lymphatic system and the manner that infection travels through the glands. One of the most practical discourses along this line that I ever heard was from a surgeon of note while he was engaged in extirpating a large thyroid in a case of exophthalmic goiter.

In July I witnessed the fifty-second operation for goiter—probably one-half of them of the exophthalmic variety—that a noted surgeon had done since the beginning of the year. It seems that a nicety of discrimination is required as to the amount of thyroid tissue that is left.

There is another line of surgical work—as yet in the experimental stage—which in my opinion is of doubtful utility. It has some attractive as well as novel features. I refer to the transplantation of tissues as well as organs—a line of work now being prosecuted mainly by Garre, Payr and Pankow. A portion of a mother's thyroid has been successfully transplanted to the spleen of her child, and the kidney of a dog implanted into the neck of the same animal, while the renal artery has been united to the carotid, and the renal veins to the innominate veins without disturbing the renal function. Robert T. Morris has recently reported a successful case of ovarian grafting. Strange to say osseous grafts give very gratifying results, and it is not at all improbable that bone grafting will play an important rôle hereafter in the surgery of the extremities.

Page claimed that physical diagnosis is the "mathematics" of medicine, but when one undertakes to define surgery or even to confine it to certain limits there is but little common ground on which to agree. It is a less difficult task to enumerate some of the attributes of a surgeon which may prove germane to the subject. There are a few principles, however, that still hold good in this department, such for instance as: "When in doubt, wait." The wisdom of this can scarcely be questioned when one has not the ready acumen to decide. Another is: "Never operate unless confronted by an actual necessity." I would not take issue with this so long as it relates to major surgery. Minor operations are done every day when a positive necessity does not exist—under circumstances, for instance, as influence the comfort of the patient or for cosmetic effect. Again: "Save every particle of tissue possible." In order to emphasize this principle, Wyeth of New York while examining an injured hand in a clinic, remarked in an exceedingly positive manner: "Surgery does not carry with it the idea 'to lop off' but rather 'to build up.'" The thought struck me then that that is a very happy expression, but recently—since my mind has been engaged in the preparation of this paper—a negro woman came into my office, having traveled in a buggy about twenty-five miles, and volunteered the information that she had a "'lump' of some kind as big as her fist that hung from her privates." I at once thought of procidentia uteri or possibly an extruded uterine polyp, but imagine my surprise on finding an hypertrophied clitoris at least three inches in circumference at its origin, fully six inches long and ending in a bulbous-shaped mass about eight inches in circumference. This entirely concealed the vaginal orifice and shut in its secretions. The meatus urinarius was also beneath the mass. Consequently the odor was extremely disagreeable. As I threw a carbolized gauze around the tumor in order to examine it the better the thought went through my mind like a flash—if Wyeth were here now would he still say: "Surgery does not carry with it the idea 'to lop off'?" It struck me that this thing certainly was sufficiently "built up." And thus it is when one attempts to lay down a rule for another in as broad a field as surgery.

By the most imperative demands the surgeon of late days is forced to make incursions into the field of obstetrics. And when it is wisely, skilfully and successfully done where else can the God-given power of man more pre-eminently manifest itself? I have never yet gained my consent to claim Cesarean section as entirely justifiable in placenta prævia and other anomalous conditions, but there is a rare dystocia in which Cesarean section offers the only avenue of escape for either the mother or the child. I have in mind now an antepartum hour-glass contraction in which a band of fibers, not Bandl's so-called ring, fully an inch in width, as firm as metal, encircled without compressing the child's neck at its juncture with the shoulders. No amount of anesthetic or efforts at manual dilatation would have any effect. Formerly in such cases the woman perished undelivered.

Whereas surgery, like law, was once taught by precedent, now a broader and ever broadening knowledge lifts one above the restrictions that pertain to mere work on gross anatomy, and gives more license—a license that will not be abused by the conscientious man—to the judgment of the individual operator. Surgeons are constantly having comparatively new problems to solve, facing rare conditions, for which there never has been a precedent, and what are they to do when so confronted? In my opinion, the conclusion of the whole matter is that a man of good judgment and discretion, possessing a sensitive conscience and governed by a high sense of moral rectitude, being thoroughly grounded in the present teachings of surgical science, has a right to blaze out a path for himself whenever the occasion arises. After all, in the final analysis, the chief elements in good surgery are simplicity and common sense.

CLINICAL OBSERVATIONS ON BLOOD PRESSURE IN ARTERIOSCLEROSIS AND BRIGHT'S DISEASE

WITH SUGGESTIONS CONCERNING THE THERAPEUTIC CONTROL OF PERSISTENT HIGH BLOOD PRESSURE.*

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The average systolic blood pressure is usually understood to be about 115 mm. of mercury when the estimation is made with a wide arm-band. It is practically impossible to fix an invariable standard for any physiologic phenomenon. In common with other physical processes, such as body temperature, respiration, urine excretion, etc., which are influenced by many conditions of every-

* Read before the Chicago Medical Society, Nov. 28, 1906.

day life, we find the degree of blood pressure likewise affected by a great variety of circumstances producing comparatively wide but transient fluctuations, especially in the direction of increase, so that it is almost impossible to speak of normal values for blood pressure. After making due allowance for these physiologic variations, experience would lead me to place the normal average limits of systolic blood pressure at from 105 mm. to 140 mm. Any persistent elevation above the latter figure may be interpreted as constituting hypertension.

Essential hypertension is a condition, which, if once permanently established and pronounced, becomes a factor of great importance to the welfare of the individual, inasmuch as it entails a lasting increase in circulatory resistance, with consecutive structural changes in the heart wall and degenerative defects in the arteries themselves.

FIRST SERIES.

The reports of blood pressure observations submitted herewith, concern only the variations in systolic blood pressure in certain cases of arteriosclerosis and chronic renal disease which have been under routine observations for considerable although variable periods of time. The blood pressure gauges used were Cook's modification of the Riva Rocci instrument with a 9 cm. arm-band, and the sphygmomanometer of Stanton. As nearly as possible exact conditions were duplicated at each application of the instrument. Physical repose and mental tranquillity were as far as possible secured. The great majority of the observations were taken with the patient in the sitting position; a comparatively few in the recumbent position.

I have had under observation during the past twelve months thirty cases of arteriosclerosis. Without exception these patients have sought relief from some functional or organic manifestation of the disease. Nine had prostatic hypertrophy; one cerebral thrombosis; one retinal hemorrhages; three choroiditis with visual defects; one angina pectoris; and a number have complained of dyspnea, precordial discomfort and cardiac irregularity.

In this series the average age was sixty-one years, and the average maximum systolic blood pressure 148 mm. In fourteen of the cases (47 per cent.) the blood pressure fell within the normal range. Sixteen cases (53 per cent.) displayed a systolic pressure persistently above the normal limit. Only six of the entire series (20 per cent.) showed a blood pressure which could be called significant—a positive hypertension. In brief, these six cases are as follows:

CASE 1.—Male, aged 81, has "pipe-stem" arteries; dyspnea; chronic cough; cardiac hypertrophy, and a harsh basic systolic murmur. The blood pressure was invariably above 200 mm., and on one occasion 225 mm. The urine was rather scant and concentrated, and contained degenerative tube casts and albumin. I am not at all sure that the renal condition is not the cause of this man's hypertension.

CASE 2.—Male, aged 76; colored; spare individual; preacher; marked calcification of all superficial arteries. There is great dyspnea and slight malleolar edema. Urine has a few casts; no albumin; maximum systolic pressure observed, 175 mm.

CASE 3.—Male, aged 41; spare; no syphilis; has attacks of anginoid character. General fibrosis of palpable arteries, with indications of aortic atheroma. Casts present; no albumin; maximum systolic blood pressure, 175 mm.

CASE 4.—Female, aged 79; nodular arteries; double senile cataract; chronic bronchitis; harsh basic cardiac murmur. Urine normal, except for casts. Blood pressure 176 mm.

CASE 5.—Male, aged 77; prostatic hypertrophy; harsh basal systolic murmur; clanging aortic second sound; cardiac hypertrophy; no albuminuria; blood pressure 170 mm.

CASE 6.—Male, aged 53; weight 131 pounds; syphilitic; fibrotic tortuous arteries; cardiac enlargement; basal systolic murmur; very reverberant second aortic sound; aortic dilatation; very dyspneic; no albuminuria; systolic blood pressure 200 mm.

The number of cases of arteriosclerosis included in the foregoing observations is not large, but the series has the distinct advantage of being made up of typical cases, each individual coming under treatment for some manifestation of arterial disease. A point of interest brought out by this investigation is the comparatively high percentage of cases (47 per cent.) of arteriosclerosis, in which the blood pressure was below 140 mm., a normal limit which certainly can not be called excessive for a group of individuals averaging sixty-one years of age. This result is confirmatory of the observations of Carter, Potain, Groedel, Dreschfeld and others. It would appear that thickening and hardening of the superficial arteries on which we base the clinical diagnosis of arteriosclerosis does not constitute sufficient cause for development of high blood pressure. We are not to conclude because the radial, temporal and other palpable arteries are sclerosed that high tension necessarily exists. The sphygmomanometer is absolutely essential to clearing up this important point, and it should be invariably employed as a means of diagnosis in every case of arterial disease. It is practically impossible for the unaided finger, no matter how skilled the observer may be in pulse reading, to determine with accuracy how much of the hardness and firmness of an artery is produced by high pressure of the blood within the vessel, and how much is due to thickening of the arterial wall.

The paradoxical absence of cardiac hypertrophy in certain cases of well-marked and even advanced arteriosclerosis, is explained now that we realize that the essential element of high blood pressure may not be present in any given case, and that the degree of sclerosis of the superficial arteries is no reliable criterion, either of the severity of alterations in visceral blood vessels, or of the degree of tension present. It is clear that some underlying factor not accessible to our present methods of investigation must be responsible for the occurrence of high blood pressure in arteriosclerosis. What this determining cause is, we are not yet sufficiently advanced in the knowledge of our subject to say with certainty, although the researches of Hasenfeld and of Hirsch supply an interesting and probably correct explanation. The contention of these authorities, strengthened by clinical and pathologic proofs, is that it is only when the vessels of the splanchnic area or of the aorta above the diaphragm are diseased that high blood pressure and cardiac hypertrophy develop in arteriosclerosis. Degeneration of the peripheral vessels alone does not appear to exert this influence. After all, this is no more than we might expect if we bear in mind the all-important regulatory position which the abdominal circulation bears to general systemic blood pressure. It is interesting to note in connection with the foregoing that each one of the six cases of my series that displayed positive hypertension (170 mm. or over) yielded the physical signs of atheroma of the aorta.

It is hardly necessary to urge the importance of carefully excluding chronic nephritis in every case of arteriosclerosis with hypertension. The frequency with which chronic renal disease is associated with cardiovascular changes is well known, and no factor is so potent as nephritis in the causation of high blood pressure. If a diagnosis of chronic interstitial nephritis can be made, it is

not necessary to search further for the cause of high pressure. At the same time, it is to be remembered that greater care than ordinary is required to diagnose nephritis in cases of arteriosclerosis, owing to the fact that some degree of renal atrophy is almost always present as a consequence of the kidneys sharing in the general vascular deterioration. Casts are deprived of their diagnostic value since they are almost invariably present in the urine of the sclerotic individual. The presence of albumin and the quantitative urinary findings are of much greater value.

So far as I am aware, there exists no absolute clinical indication that will serve as a means of identifying cases of splanchnic sclerosis. Fraenkel and Hasenfeld have pointed out that corpulent persons of a sedentary mode of life are especially prone to the development of sclerosis in the abdominal vessels, thin individuals being less liable to excessive blood pressure. This observation seems to be borne out by clinical experience, yet it is manifestly impossible to establish corpulency and physical indolence as reliable criteria of the local distribution of retrograde vascular changes. Ophthalmoscopic examination may be of service by enabling us to detect changes in the retinal vessels in cases where the superficial arteries are free from gross indications of the disease, and resort should be had to this aid to diagnosis in all doubtful cases.

When the aorta above the diaphragm is seriously involved, the diagnosis is, as a rule, much easier. Alterations of the basal systolic heart sound and a clanging, reverberant quality to the second sound in the aortic area, will frequently be revealed by careful auscultation.

It is altogether likely that those rare and puzzling cases of cardiovascular disease with hypertension without commensurate involvement of the kidneys that come under observation may prove to be instances of splanchnic arteriosclerosis. In concluding this brief consideration of arteriosclerosis we may be justified in drawing the following empirical deductions from the information in hand.

DEDUCTIONS.

1. The ordinary clinical type of arteriosclerosis is not necessarily accompanied by high blood pressure, a large percentage failing to show this development.

2. When high blood pressure is met with in arteriosclerosis it points to the existence either of associated renal disease or sclerosis of the splanchnic vessels and of the aorta above the diaphragm—one or both.

3. If we are able to exclude chronic intertitial nephritis in such a case, splanchnic or aortic sclerosis is to be suspected.

SECOND SERIES.

The second series of observations that I wish to report comprises sixty cases of chronic Bright's disease. Only a résumé of the maximum records will be given, the full detail being reserved for a future communication.

Number of cases investigated, 60—male, 34; female, 26.

Average age, 51 years.

Average weight, 160 pounds.

Average maximum systolic blood pressure, 190 mm.

Average minimum systolic blood pressure, 165 mm.

Maximum systolic blood pressure recorded in any case, 285 mm.

Minimum systolic blood pressure recorded in any case, 110 mm.

The high average pressure in this series constitutes a marked contrast to the average recorded in the preceding group of arteriosclerosis, being 190 mm. in nephritis, against 148 mm. in arteriosclerosis. This furnishes proof, if proof were needed, of the almost essential position which renal disease occupies in the causation and maintenance of morbid hypertension. The permanent character of this symptom in chronic nephritis, and the extreme difficulty of influencing it by treatment, is indicated by the high minimum systolic pressure recorded in this series (165 mm.), despite a systematic effort to reduce it in almost every case by diet, hygiene and other therapeutic measures.

An interesting outcome of my study of these cases is the evidence forthcoming as to the relation existing between albuminuria and high blood pressure.

1. Number of cases without demonstrable albuminuria, 8. Average maximum systolic pressure in these cases, 200 mm.

2. Number of cases in which the albuminuria amounted to a trace only—too minute for accurate volumetric estimation, 29. Average maximum systolic pressure in these cases, 180 mm.

3. Number of cases in which albumin was present in the urine in appreciable amount, 21. Average maximum systolic blood pressure in these cases, 197 mm.

Average amount of albumin in volumetric p. c., 3.76 per cent.

Judging from these records it would appear that no constant ratio exists between the degree of blood pressure and the intensity of the albuminuria. In the foregoing series the highest average blood pressure was noted in cases without albuminuria.

Another point of interest to determine is the relationship between the quantity of urine excreted and the degree of blood pressure. Thirty-one cases were carefully observed in this regard, the urine being collected and measured in a routine way.

Average maximum blood pressure in these cases, 180 mm. Average daily excretion of urine, 1,554 cc.

From this it would appear that high pressure is not necessarily attended by a marked increase in urine outflow. Some detail of this observation is of sufficient interest to detain us a moment. Thus, in a case with a pressure of 285 mm., the urine equaled only 1,000 c.c.; another with a pressure of 265 mm. had a urine of 720 c.c. of urine. On the other hand, a blood pressure of 255 mm. with 1,280 c.c. of urine; one of 270 mm. with 1,000 c.c. of urine. On the other hand, a blood pressure of 255 mm. has coincided with a polyuria of 5,740 c.c.; one of 210 mm. with 2,400 c.c. of urine; one of 140 mm. with 2,400 c.c. of urine, etc. No fixed relation between arterial pressure and renal activity would appear from these statistics.

Chronic Bright's disease is essentially a disease of systemic scope involving the arteries, and the heart as well as the kidneys. Arterial hypertension is one of its salient features, a fact long known and now strikingly demonstrated by blood pressure readings with instruments of precision. A systolic blood pressure of over 200 m.m. is exceedingly common, and cases have been reported where it has attained the extreme degree of 300 mm. The highest record I have observed using a 9 cm. arm-band was 285 mm., in a young woman with enormous cardiac hypertrophy, who died shortly after of circulatory failure and uremia. Other high systolic pressures in my records in different cases are 270 mm., 265 mm., 260 mm., 255 mm., and 235 mm. Twenty-six of the series of sixty cases displayed systolic pressures of 200 mm. and over.

Cases do occur, however, which are not accompanied by hypertension. Eight instances of this character are included in my series, two of these being cases of secondary low blood pressure, where the heart had become dilated and was unable to sustain the circulatory load.

Notwithstanding these occasional exceptions, high blood pressure is so frequent and significant an accompaniment of contracted kidney that it constitutes one of the most valuable diagnostic indications of this disease. Urinary criteria are often obscure or may fail entirely, as we have been made aware by the researches of Emerson, Cabot and others. If the sphygmomanometer is used as a routine procedure in diagnosis, high blood pressures can not escape detection, and will put the observer on the alert. A systolic pressure of 200 mm. or thereabouts points with so clear a significance to the kidneys as to reduce to a minimum the possibility of these cases escaping proper interpretation.

THERAPEUTIC CONTROL.

It now remains, in fulfilling the title of my paper, to discuss the question of the proper management of high pressure cases. In inviting your attention to this aspect of the subject, I have a specific purpose in view, viz., the consideration of the limitations of drug therapy in the control of hypertension. I regard it as important to raise this question at the present time, owing to the increasing tendency to the use and I believe the unwise use of vaso-dilators in Bright's disease and other high tension disorders. In order to obtain a clearer view of the subject, a brief resumé of the clinical facts of the situation will be of service. All high blood pressure conditions are essentially characterized by the element of systemic toxemia; indeed, high blood pressure is primarily no more than a vascular reaction against the presence of toxins in the circulating blood. In Bright's disease this vascular reaction is perpetuated by the continuous character of the toxemia, and is subsequently enhanced by the uremia which results from advancing renal inadequacy. This chronic vaso-constriction leads to fibrosis of the arterial walls and impairment of their elasticity, so that the work of the heart is increased and the organ hypertrophies. Tracing the matter to its termination, we find that the permanent and progressive character of the peripheral obstruction and the limited possibilities of the heart for adjustment ultimately lead to cardiac failure; the ventricles dilate and the support of the circulation being thus impaired, secondary low pressure becomes substituted for primary high blood pressure. Progressive cardiac failure is, in theory at least, inevitably in store for every such case of cardio-renal disease.

A very different aspect is revealed if we regard the matter from the physiologic standpoint. That the extensive structural involvement and functional crippling of the kidneys must necessarily be attended with enlarged powers of circulation is obvious, since diminished powers of excretion can be compensated for only by increase in the force of the blood current in the glomerular vessels. When we consider that the energy of the heart's contraction is mainly expended in overcoming the resistance presented by the arterial blood pressure, we can easily see why, in high tension cases, the heart hypertrophies. The entire cardiovascular sequence may be regarded as a reaction of the organism against morbid influences, and as such may be looked on, within certain limits, as conservative and compensatory.

Clinical emphasis of this fact is furnished by the greater comfort and activity enjoyed by the nephritic with high tension and cardiac hypertrophy than his less fortunate brother with whom such compensation through some inherent fault of vitality fails to become established. A still more striking contrast is constituted by the misery of the stage of secondary low tension as compared with the comparative vigor and good functional health of the period of high tension. After observing so impressive a transition one almost feels inclined to endorse the statement of Broadbent, that "it is not high tension but low tension that is to be feared in Bright's disease." Notwithstanding the truth of such an assertion in the ultimate sense, a doubt of its entire validity is forced on one by the realization that most of the functional disturbances and pains of Bright's disease arise in consequence of high tension. To this factor also may be traced most of the fatal developments which complicate its course, such as apoplexy, angina pectoris, and the dreaded terminal heart failure. A consideration of all the clinical facts must, it seems to me, impress the observer with a due sense of the value of high blood pressure to the renal invalid, yet modified with a large reservation of doubt engendered by the capacity of this element to work the ultimate undoing of the patient.

High blood pressure is a friend to the nephritic patient, but one that needs careful watching, otherwise it may betray him into many a pitfall. This is exactly the attitude, in my judgment, in which we should approach the problem of the therapeutic regulation of blood pressure. We should be watchful rather than officious. It is to be remembered that high blood pressure is a compound of two conditions, viz., increased peripheral resistance and augmented propulsive power of the heart, the former existing as a reaction against toxemia, and the latter as a response to increased work. It is self-evident that the therapeutic control of the condition must first concern itself with reducing as far as possible the systemic toxemia present. The *indicatio-causalis* is disintoxication. Regulation of the diet, the fluid intake, the personal hygiene in all its details and stimulating, to a reasonable activity, all the accessory organs of elimination, must constitute the basis of the therapeutic regulation of high blood pressure in Bright's disease, and other disorders characterized by high tension. The details of these various procedures have been frequently and fully elaborated by eminent authorities and I confess myself unable to add anything of importance.

The temptation to employ active vascular medication when the sphygmomanometer has demonstrated a high blood pressure is great, and the question as to when and to what extent we are justified in resorting to such artificial means of lowering high tension is a difficult subject on which to dogmatize. I therefore submit the following propositions, with a due sense of their inadequacy, not as absolute rules to be followed in all cases, but as tentative suggestions for the medicinal treatment of hypertension as the outcome of my own experience:

SUMMARY.

1. Before proceeding with the exhibition of vascular drugs, the heart and circulation should be examined with the utmost care. The points of importance to be noted are the character of the heart tones, the relative degrees of hypertrophy and dilatation, the existence of gallop-rhythm, the pulse rate in both the upright and recumbent positions, and after activity. Both the systolic and diastolic blood pressures should be carefully estimated in the recumbent and the upright positions, and the degree of postural variation carefully noted, in order to determine a want of vigor in the ventricle. A rapid, irregular or intermittent pulse, the presence of galop rhythm, a mitral systolic bruit, inverse pulse and pressure record, all point to cardiac inadequacy in face of the high blood pressure, and may serve as indications for cardiac stimulation in place of, or in conjunction with, vaso-dilatation. Because the blood pressure is high, it does not

necessarily follow that vascular relaxants are indicated; it may be that cardiac tonics are more urgently needed.

2. Excessive blood pressure of itself does not constitute an absolute indication for drug treatment, nor does it serve as reliable ground for a bad prognosis. It is remarkable how well Nature accustoms herself to severe circulatory resistance, so that cardiac integrity is maintained and symptoms remain absent for long periods, with pressures of 200 mm., and even much higher. The writer has patients at present under observation whose blood pressure, covering a period of two and three years, has seldom been below 200 mm., yet they have enjoyed a good measure of activity and freedom from symptoms. One individual whose blood pressure has ranged from 200 mm. to 265 mm. for one year has remained practically free from symptoms. It is well to accent the point that because the blood pressure is high it does not necessarily follow that it must be reduced by drugs in order to insure either the patient's safety or comfort.

3. Active vasodilators (nitrites) may occasionally be necessary to meet emergencies, such as stenocardia, angina pectoris, apoplexy prodromes, etc.; under such circumstances they are perfectly justifiable and may be given with a freedom not at other times permissible.

4. Blood pressure may be reduced temporarily by vasodilator drugs, but it is very difficult to produce a permanent lowering except in the presence of a weak heart. This is easily understood when we remember that vascular pressure is a compound of ventricular propulsion and peripheral resistance. If you modify the latter in the presence of a strongly acting ventricle, the pressure will be maintained by the heart. Modify the peripheral resistance in the presence of a weak ventricle and the blood pressure will fall with a simultaneous increase in the pulse rate, due to inadequate efforts on the part of the heart to maintain pressure. It follows, therefore, that a material fall in blood pressure which is more than temporary, due directly to vasodilators, especially if accompanied by quickened pulse rhythm and not marked by improvement in the patient's sense of well-being, is apt to be unfavorable, being ominous of a weak heart.

5. A sustained high blood pressure (over 200 mm.), if accompanied by symptoms of disquieting character, may render a course of vasodilator medication advisable. The drug chosen should be slowly and cautiously introduced, closely watching its effects on blood pressure, pulse rate and subjective state of the patient. The sudden employment of full doses of an active vasodilator is to be condemned, as it may produce serious consequences to the patient's heart and nervous system. A fall of 10 to 15 per cent. is, as a rule, all that is necessary or judicious to accomplish by drugs.

6. The benefit derived from vasodilator medication can not be properly gauged by the blood pressure record. The patient's subjective comfort and more especially the pulse rate form a better index of the effect produced. The most favorable influence in my experience has been in cases where no manifest fall in blood pressure has resulted, but subjective disturbances have disappeared, and the pulse has diminished in frequency. I should say as the result of personal observation that the case which above all others will be best influenced by vasodilators is one in which the blood pressure is high (over 200 mm.), and in which no direct response to the drug in the pressure record is apparent, but merely the indirect response in pulse rate and bodily comfort, as above noted.

7. The employment of vasodilators in the late stages of Bright's disease with cardiac dilatation, dropsy, etc., is practically useless, and were it not for the fact that the vasomotor control of the peripheral circulation is too much disturbed to respond, they might do harm. The fact that the case was primarily one of high tension forms no excuse for continued reliance on these drugs under such circumstances.

103 State Street.

GONOCOCCUS-CONJUNCTIVITIS IN ADULTS AND INFANTS.

A REVIEW OF TREATMENT AND RESULTS IN ONE HUNDRED AND TWENTY-NINE CASES IN THE PHILADELPHIA GENERAL HOSPITAL DURING THE PAST SIX YEARS.*

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The study of the following 129 cases of gonococcus infection of the conjunctiva, occurring in the services of Drs. G. E. de Schweinitz, C. A. Oliver, H. F. Hansell and J. W. Croskey in the Philadelphia General Hospital, covers a period extending from May, 1900, to July, 1906.

For a convenience and for more accurate study such a series would naturally divide itself into two groups:

1. Those in which the infection occurred subsequent to labor, or gonococcus-conjunctivitis.

2. Those in which the infection could be traced directly to birth, or conjunctivitis neonatorum.

In using the term gonococcus-conjunctivitis in preference to gonorrheal, I follow the suggestion of Holt, because it eliminates a factor which is wholly lacking in many of these cases. Of the 129 cases that came under observation, 72 cases could be included under Group 1, or gonococcus-conjunctivitis, and 57 under Group 2, or conjunctivitis neonatorum. Of these 72 cases of the former involving 106 eyes, 54 cases occurred in adults, 44 of which were males and 10 females, while the remaining 18 cases were among children and only 4 of these were of the male sex. The cause of this apparent influence of age on the frequency of this affection in the two sexes is obvious and will be referred to indirectly later on.

Among the adults there was a bilateral involvement in 19 cases and a unilateral involvement in 35 cases and, strangely enough, in the latter series the left eye was involved twice as often as the right, the actual numbers being 23 and 12. Among the children 15 cases were bilateral and 13 unilateral.

GROUP I, OR GONOCOCCUS-CONJUNCTIVITIS.

Positive reports of bacteriologic examinations were obtained in 48 cases, and, while in the remaining 24 no record of such an examination could be found, 16 of them had associated gonorrhea, which leaves but 8 partly unaccounted for. Of these a history of accidental infection from probably contaminated eyes was obtained in the cases of 2 female children and 1 female adult; one male adult had had two previous attacks of gonorrhea the last 6 months before his eye became involved, but stated he had no urethral discharge at the time; another male adult denied gonorrhea, but there was no record of an examination. In the remaining cases, two male adults and one male child, no data of any kind were recorded. It should be stated that over half of the rec-

* Read before the Section of Ophthalmology of the College of Physicians of Philadelphia, Nov. 20, 1906.

ords that failed to give bacteriologic data were filed before the present efficient laboratory system was instituted, and some of them were due to the failure of the resident to record results of such an examination.

On admission to the eye wards 42 of the 106 eyes were found to have some corneal involvement, while no data of the same could be found in 64. Sixteen of these 64 eyes that entered with clear corneæ subsequently developed some abnormalities in this structure, so that on discharge 48 corneæ had remained clear and 58 had undergone some change consequent to the gonococcus infection.

In those cases in which no vision was recorded and in which some corneal involvement had occurred, by knowing the site of the lesion and such remarks as "cornea much clouded," "macula near corneo-scleral junction, etc., a crude estimate of the probable effect on vision could be made. It should be stated that where the eye was lost or only light perception remained, such conditions were almost invariably recorded. By such procedure it was found that of these 58 eyes that suffered some corneal change, 8 were enucleated, 21 were blind or had but light perception, 10 had a moderate reduction of vision, while in 19 sight remained unimpaired or was but slightly affected. It is thus seen that where the cornea became involved it resulted in a practical loss of just 50 per cent. of the number of eyes affected.

If we follow out the 16 cases in which the cornea became involved while in the house, we find that 2 eyes were enucleated, 4 were blind or had but light perception, 3 showed a moderate reduction in vision and there was but slight or no impairment in 7 eyes. It may be stated that one of these 16 eyes had a peripheral ulcer that perforated as the result of a blow from the patient's thumb, but owing to the site of the lesion he recovered with some vision. It can thus be seen that in 6 of these 16 eyes, or 37.5 per cent., there was practically a total loss of vision.

It was rather interesting to trace out how many of these 72 cases of gonococcus-conjunctivitis were due to a probable autoinfection. As above mentioned, there were 44 cases among male adults, and, of these, 32 had a urethritis, while in 12 the records failed to state its presence or absence. Of the 4 male children involved there was no record of any associated gonococcus infection; 5 of the 10 cases in female adults had the clinical manifestations of a gonorrhea, while in the remaining cases no note was made as to its presence; 6 of the 14 cases in female children also had the clinical manifestations of a gonorrhea, bacteriologic examination verifying the diagnosis in 4 cases, while in one other a suppurating bubo developed. It is not likely that any one familiar with the conditions at Blockley would take exceptions to the conservative statement that probably 90 per cent. of the male adults treated for gonococcus-conjunctivitis could be shown to have an associated gonorrhea if proper measures were pursued. Also, that if carefully prepared smears were made from the cervix or from Bartholin's and Skene's glands in the female, fully 50 per cent. of those delivered at the maternity and who suffered from gonococcus-conjunctivitis would show some form of associated gonococcus infection. Such being the condition of affairs, these cases do not excite the same amount of sympathy as do the children that come under observation for gonococcus-conjunctivitis, where, if there is a vaginitis existing in the female, it is almost invariably one of accidental infection.

All of us are familiar with the increase in recent years of gonococcus-conjunctivitis in young girls, due probably to the increased frequency of vulvo-vaginitis in these children. While vaginitis or vulvo-vaginitis in children probably belongs more accurately to gynecology, nevertheless it has a distinct bearing on ophthalmology, and, in my opinion, deserves more consideration than has been accorded to it in the past.

A number of excellent papers have been written on this subject in recent years, among which may be mentioned one by Dr. Sara Welt-Kakels[1] and another by Dr. Emmett Holt.[2] As is now well known, this affection has a marked tendency to become epidemic in institutions for children and is exceedingly difficult to stamp out, probably more so than any of the so-called infectious diseases of childhood. Holt found that in the early years of his experience with this affection in the Babies' Hospital in New York that sterilization of the napkins was not sufficient. Subsequently all cases were isolated, given special nurses and separate personal utensils, wash rags and sponges were forbidden and a separate laundry established; but with all this they were not fully able to control the disease. It was not until bacteriologic examinations were made in all children applying for admission that they obtained some control over this intractable and markedly infectious condition. He states that during eleven years but 6 cases of gonococcus-conjunctivitis developed in the house, and 4 of these were among the 273 cases of vaginitis. It is also interesting to note that there were 26 cases of gonococcus arthritis, 19 of which occurred among male children; of these 19 cases but one had a demonstrable associated gonococcus infection and that was a conjunctivitis. Smears were made from the eyes, nose, mouth and urethra with negative results. One of these cases of arthritis without other demonstrable gonococcus infection was the probable origin of subsequent cases of vaginitis that developed in the same ward.

It is but fair to assume that what has occurred in the New York institutions has likewise been going on in our own city. Without any effort at investigating the true state of affairs, I know of three hospitals in this city that have had epidemics of this affection within the past six months, and one of these was compelled to refuse admission to all female children during a portion of the past summer. In Blockley since March 27, 1906, there have been 38 cases among 183 children without the development of one case of gonococcus-conjunctivitis. This is unquestionably due in a great measure to the rigid routine now in force, as may be illustrated by the following case: A child who had had a vaginitis for some time was discharged on the urgent demands of the parents, only to return a week or some ten days later with a well-developed gonococcus infection of the conjunctiva. Among the 14 cases of gonococcus-conjunctivitis in female children occurring in the present report, the records show that 11 were admitted to the eye service from outside sources. As to the 3 that were transferred from other house services, one had vaginitis and later developed a bubo, while in the remaining two no note was made as to the existence of a vaginal discharge.

I have dwelt more fully on this condition of vulvo-vaginitis in children because it seems to me that we can no longer look on a gonococcus infection of the conjunctiva as a condition which affects the eye alone, but must regard it as a possible origin of infection that may

1. N. Y. Med. Jour., October, 1904.
2. Ibid., March, 1905.

jeopardize and mar the whole future usefulness and life of the individual so affected. While I appreciate the many difficulties that often attend the treatment in private practice of these cases of gonococcus infection of the conjunctiva, it seems to me that all such cases, especially where other children are in the house, must be treated with the same restrictions that one would institute in a case of any of the so-called infectious diseases. It also seems essential that the nurse in charge should be told of the increased susceptibility of the vaginal mucosa in children and be given definite instructions for guarding against a possible infection of the same. As can be shown by this report, and as would naturally be expected, the greatest amount of danger to the eye from a specific vaginitis does not arise among hospital cases, but in cases outside the same or where they have been discharged from these institutions before a definite cure has been established.

With a knowledge of this increasing prevalence of gonococcus infection in young girls, in my opinion, ophthalmologists would not be adopting a too radical procedure to have a vaginal examination made in these cases immediately on their admission to the general eye wards. This could be readily done at the time the child is bathed without in any way attracting the attention of the patient to the examination desired.

Among the 54 cases in the present series that occurred in adults, 6 gave histories of accidental infection, these being equally distributed between the two sexes. Of the males, one attributed the infection to a public towel, another to sleeping with a man who had a purulent discharge from the eye, and the third, the day before the eye became involved, had a foreign body taken from his eye by means of a handkerchief borrowed from a friend. Needless to say, all of these strenuously denied gonorrhea, and no record could be found of such an associated affection. As to the women, one on the day previous to her first symptoms examined the inflamed eye of a friend, another nursed a child whose eye became sore three days after birth, while the third case was probably infected by her husband who had an acute gonococcus urethritis at the time her eye became involved. This last case I sent into the hospital and it may have been an autoinfection, but, if so, her original infection was probably of recent date, for I was told she had none of the clinical manifestations of a gonorrhea one month before, at which time she was delivered of a healthy baby who failed to develop a conjunctivitis, and no instillation was used after delivery aside from boric-acid solution. By way of interest I may add that this eye showed a virulent infection and quickly ran a destructive course and was finally enucleated.

In reference to the children, as above stated, none of the 4 cases in males gave histories of an associated gonococcus infection. While in but 6 of the 14 females was there recorded a history of co-existing vagnitis.

GROUP II, CONJUNCTIVITIS NEONATORUM.

Taking up the 57 cases of conjunctivitis neonatorum, we found that 24 cases developed in the house and 33 were admitted from outside sources. These were pretty evenly divided between the two sexes, 27 being males and 30 females. Inasmuch as during the past six and a half years, which is the interval covered by the present series of cases, there were delivered, in the maternity wards, some 1,076 infants, it is evident that 2.2 per cent. of these children developed conjunctivitis neonatorum. Of the whole number of cases, 52 were bilateral and 5 unilateral, making the total number of eyes involved 109. Records of bacteriologic examinations were found in nearly all of these cases, 50 giving positive reports, 3 were negative and in 4 cases no note could be found of such an examination, although in one of these the father was known to have a urethritis and the mother a vaginal discharge. Of those cases credited with negative reports, one had but one examination made, was born in the house, developed symptoms two days after birth and had the clinical manifestations of a conjunctival gonococcus infection; another likewise had the clinical symptoms and only one bacteriologic examination, but was admitted from the street, while to the third these same conditions would apply, with the exception that this infant had, in addition, a vaginal discharge.

It is now the rule at Blockley to obtain three negative reports of at least 24-hour intervals before discharging the case, unless a premature discharge is demanded by the parent. This seems to be a good working rule, but that it is none too rigid may be shown by one case in which three successive negative reports were obtained, only to be followed by five positive ones, before further negative results were determined. Another case gave 6 successive negative reports and then a positive one, while numerous others showed two successive negative examinations that were followed by positive ones. At this point it may be well to refer to the above-mentioned premature discharge of these cases. The records show that at least 7 cases were discharged on the demand of the parent before an effectual cure had been established, and 4 of these gave positive reports on their last bacteriologic examination. It seems to me that it would be well to follow up these cases after their departure from a municipal institution, such as the Philadelphia General Hospital, and not allow them to pass from medical observation for days or weeks at a time, as is probably often the case, this interval being largely determined by the apparent condition of the eye. This difficulty could be overcome by direct communication from the hospital to the family physician, if they have a doctor acting in this capacity, or by having these cases visited by either the so-called district physician or the medical inspector in whose district the case resided, for it is well known that medical advice given to the majority of these patients on their departure from a hospital is woefully neglected and still more frequently absolutely unheeded. In several instances where these cases were referred to outside sources, probable serious consequences were averted.

On admission to the ward of these 109 eyes the cornea was clear in 95, while 14 revealed lesions of varying degrees of intensity. While in the ward, or on discharge, the cornea continued to remain free from any pathologic process in 84 eyes, showing that in 11 eyes corneal changes had occurred while they were under observation.

The probable effects on vision produced by the corneal changes in the 25 eyes showing such involvement at some time during their treatment was as follows: 8 were blind or had but light perception, 7 of these cases being admitted from the street and one from the house, while the remaining 17 cases had various degrees of impairment, several probably escaping with vision unaffected. Among this last number 14 were admitted from the outside and but 3 from house services. Concerning the 11 eyes that developed corneal changes while

under observation, 4 were blind or had but light perception, 3 of these entering the ward from without and one from within the house, while 7 had some probable visual defect, 5 of these entering the institution from the street and two being transferred from other wards.

The mortality in the 57 cases above reported was high; 11 of them dying after varying terms of treatment as the result of associated gastro-intestinal or pulmonary lesions. In fact it may be stated that a large number of the infants that came under observation showed marked evidences of malnutrition, and in two instances the records showed co-existing evidences of hereditary syphilis.

TREATMENT.

Before referring to the specific treatment instituted in these two groups of cases, it seems appropriate to allude to a condition which frequently has a direct bearing on the ultimate result in these cases. In gonococcus infections of the conjunctiva where success or failure of treatment is usually dependent on the condition of the cornea, we should take some cognizance of one of the important factors producing a change in this structure. I refer to the excessive chemosis of the conjunctiva which is so common in this affection and which is very frequently the cause of corneal involvement by its impinging on this structure.

Probably every observer has seen cases of slight corneal haze clear up after incisions were made in a much chemosed conjunctiva. Such being the case, how easy it would be to attribute the saving of the cornea to medical rather than to surgical procedures. Hence I believe we should know in what cases scarification was used and how much of the success attained was probably due to this procedure. Unfortunately I could not find any data bearing on this important factor.

In analyzing this series I have drawn the percentages from the number of eyes rather than from the number of cases because it seems to be the more accurate, for the latter method would fail to state whether the cornea became involved in one or in both eyes and it would also probably cause other faulty conclusions as to the true conditions. The treatment sheets filed with the records show that argyrol was used routinely by but one of the four visiting chiefs. Such being the case, it is but fair to surmise that in the majority of cases the severe infections were treated with that preparation in which the attending surgeon had the most confidence. Within the past nine months I have had the privilege of hearing three of the visiting surgeons express their preference for nitrate of silver, and, judging from the frequency in which this silver salt was used by the other surgeon in attendance, he probably had the same preference.

In the cases about to be referred to, the patients were put to bed on their admission to the eye ward, appropriate treatment was instituted to correct any constitutional impairment and, needless to say, when any associated gonococcus infection existed, proper measures were employed to combat the condition. It also seems proper to allude to the faithful and efficient nursing which has been such a notable feature in this series of cases, and, in fact, is an essential factor in the proper management of the affection. Atropin and eserin were used in those cases in which they seemed indicated.

GROUP 1.—*Gonococcus-conjunctivitis.* In these cases cold was consistently used in the early stages of the affection unless there was some co-existing corneal involvement. Dr. Miles Standish states[3] that he would regard heat as preferable if the aim of the surgeon is to reduce swelling. If to affect further growth of the gonococcus, he refers to Kolle and Wassermann's statement that a growth of this organism is inhibited at the temperature of 86 F. Dr. Standish took the temperature of the conjunctival sac in a patient with gonococcus-conjunctivitis before the application of ice and found a temperature of 100 F. After the application of cold for 22 hours the temperature was reduced but 2 degrees; as a consequence he regards the application of cold as useless in inhibiting the growth of the organism. Dr. Weeks, in referring to this statement, stated that he had reduced the temperature of the conjunctival sac to 92 F. by the application of cold which was at least sufficient to retard or limit the growth of the gonococcus. Dr. de Schweinitz, in the last edition of his book, states that in a certain number of cases of gonorrheal conjunctivitis in adults, during the early stage, cold is not only most agreeable to the patient, relieving pain and irritation, but of distinct value in checking the inflammatory process and the movement of the bacteria.

In reference to the solutions used for cleansing, boric-acid solution was given the preference, with potassium permanganate a close second, while bichlorid solution, formalin and silver nitrate were each used in about an equal number of cases and would rank a poor third. It may be said that in association with these sterile water and physiologic salt solution were used in some cases.

THE SALTS OF SILVER IN GONOCOCCUS-CONJUNCTIVITIS.

The various silver salts used were the nitrate in 34 cases, argyrol in 20 cases, protargol in 2, nitrate of silver with argyrol or protargol in 9; no silver preparation was used in 5, and in 2 cases the treatment sheet was missing from the records.

To obtain any idea of the effects of treatment the only cases available are those which entered the institution with clear corneæ. Of these the records showed that silver nitrate was employed in 31 eyes, with subsequent involvement of the cornea in 8, or 25.8 per cent.; argyrol in 20 eyes, with corneal involvement in 4, or 20 per cent.; protargol in 4, with no subsequent corneal changes; nitrate of silver and argyrol in 6 eyes, with corneal involvement in 2, or 33 1/3 per cent.; no silver preparation in 2, with one eye developing corneal changes, or 50 per cent., and in the case of one eye that revealed corneal involvement the treatment sheet was not among the records. It is thus shown that 16 of the 64 eyes above enumerated developed some abnormalities in the corneal tissues. Among these nitrate of silver was used in 2 eyes that were enucleated, one that was blind or had but light perception, one that had a moderate reduction of vision and 4 that had slight or no impairment. So that among the 31 eyes in which nitrate of silver was used there was a practical loss of the eye in 3 cases, or 9.67 per cent. In the eyes treated with argyrol 2 were blind or had but light perception, one had a moderate reduction, while another had but slight or no impairment of vision. Here the practical loss of eyes would equal 10 per cent. In the 2 that suffered corneal changes when treated with nitrate of silver and argyrol one had a moderate reduction and another slight or no reduction of vision. There was slight or no impairment of sight in the one case

3. THE JOURNAL A. M. A., Dec. 17, 1904.

with corneal change where no silver preparation was used, while the process involving the cornea in the eye where no treatment sheet could be found, resulted in a blind eye.

Standish[3] reports 32 cases treated with protargol with corneal involvement in 34 per cent. and 23 cases treated with argyrol with subsequent corneal changes in 30.5 per cent. He reports[4] an additional 29 cases treated with argyrol, so that in all he had treated 52 cases with this preparation with subsequent corneal involvement in 22 cases, or 42 per cent.

Standish, since the appearance of argyrol, has given the preparation a thorough trial and evidently still regards it as our best method of exhibiting silver in gonococcus infections of the conjunctiva, despite Derby's most interesting paper on the bactericidal properties of the various silver preparations now on the market. Derby,[5] in his laboratory experiments, used the *Staphylococcus pyogenes aureus* instead of the gonococcus owing to the difficulties attending the propagation of the latter by our present laboratory methods. He found that nitrate of silver in 0.5 per cent. to 2 per cent. solutions killed the culture in 2 to 5 minutes and that an exposure of 30 seconds to a 0.5 per cent. solution was sufficient to prevent its growth. Protargol in from 2 per cent. to 4 per cent. solutions killed in from 3 to 5 minutes, while a one-minute exposure prevented growth. Collargol in a 4 per cent. solution failed to prevent a growth after an exposure of an hour. Ichthargan and argentamin in weak solutions both killed the growth after an exposure of 4 minutes, but he adds that both are very irritating.

He states that argyrol's bactericidal properties are very weak and that a large series of observations gave a growth after an exposure of 1 to 2 hours to solutions the strength of which varied from 10 per cent. to 50 per cent. He calls attention to the experiments of Verhoeff and confirms his statements that if human blood serum be added to solutions of sodium aurate and protargol their bactericidal properties are destroyed. He also states that he found that the action of Lugol's solution and bichlorid solution of the strength of 1:1000 was much retarded by serum such as hydrocele fluid and bovine blood serum.

GROUP 2.—*Conjunctivitis Neonatorum.* Here I deem it necessary again to refer to the general nutrition of the majority of the cases that come under observation in the Philadelphia General Hospital, a factor which has no little bearing on the ocular results in these cases.

Inasmuch as the vast majority of these infants come from the lowest social strata in the city, poverty, ignorance and negligence are responsible for the advanced stages of malnutrition so frequently seen on their admission and renders a prognosis grave, not only from an ocular aspect, but from a systemic one as well.

In taking up the cases in this group we find that cold was used in the initial stages in the majority of cases, but not as consistently as in Group 1. For cleansing, boric acid was used in 36 cases, potassium permanganate in 14, formalin in 5 and bichlorid in 2 cases. Here, as in Group 1, sterile water and physiologic salt solution were used with the above in some cases.

THE SILVER SALTS IN CONJUNCTIVITIS NEONATORUM.

As to silver, the nitrate was used in 32 cases, argyrol in 8, nitrate of silver and argyrol in 9, the nitrate and protargol in 1 and no silver preparation in 7 cases. It is interesting to note the result in this last group, for these 7 cases treated without any silver preparation recovered with the cornea intact or at least no note of any lesion could be found on the records. Whether the result obtained in these few cases was influenced by the less amount of manipulation required, by the character of the infection or by the few cases reported, can not be determined, but probably all were contributing factors.

Referring again to those instances in which the eye was free from corneal involvement on admission, we find that 50 of these eyes were treated with nitrate of silver, with subsequent corneal involvement in 6, or 12 per cent; 14 eyes were treated with argyrol, in which but 1 developed corneal changes, or 7.14 per cent.; 16 with nitrate of silver and argyrol, with 2 showing corneal changes, or 12.5 per cent.; 2 with nitrate of silver and protargol, in both of which the cornea became involved, while in 13 eyes no silver preparation was used and, as above stated, none of these developed abnormalities of the cornea. Standish reports 50 cases treated with nitrate of silver with corneal involvement in 5.6 per cent.; 150 cases treated with protargol, with corneal changes in 2 per cent., and 201 cases with argyrol in which only 4 cases, or 2 per cent., developed some corneal abnormality.

In the 11 eyes that developed some change in the corneal structure while under observation, the treatment was as follows: With nitrate of silver one eye was blind or had but light perception, while in 5 there were varying degrees or no visual impairment. This gives a total loss of vision in 2 per cent. of the eyes so treated.

With argyrol one eye became blind or a total loss of vision in 7.14 per cent. In the 2 eyes with corneal involvement treated with nitrate of silver and argyrol, neither resulted in a destruction of vision, while in the 2 treated with nitrate of silver and protargol the corneal changes were extensive and produced blind eyes.

In conclusion, it may be noted that at Blockley both the Credé method and the instillation of argyrol are used at the maternity. At the University maternity, argyrol has been consistently used during the past year or two, while at the Preston Retreat I have been told that argyrol was abandoned about one year ago and that the Credé method is now exclusively employed. At the Maternity Hospital the Credé method alone is used.

1928 Chestnut Street.

4. Ophthalmic Record, August, 1906.
5. Boston Med. and Surg. Jour., Sept. 27, 1906.

A CONTRIBUTION TO THE STUDY OF THE OPSONINS.

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While engaged in the study of the opsonins there arose the following questions which have not received appropriate consideration in previous publications and which, nevertheless, are deemed important:

1. What influence has the strength of the bacterial emulsion on the phagocytic index and the percentage of phagocyting cells?

To this end an emulsion of the *Staphylococcus aureus* of definite strength was prepared and progressively diluted; the serum and corpuscles came from a healthy individual. The results are shown in Table 1.

In this table it will be observed that the phagocytic index and the percentage of phagocyting cells are, generally speaking, in direct proportion to the strength of the bacterial emulsion. This influence of the varying

TABLE 1.

No. of cocci per c.mm.	No. of cocci per leucocyte.	Percent. of phagocyting cells.
11,800,000	7.3	100
8,850,000	4.7	97
5,900,000	3.7	87
4,425,000	3.2	87
2,950,000	2.8	86
2,212,500	2.4	71
1,475,000	2.0	74
1,106,250	1.8	75
737,500	1.6	67
553,000	1.0	47
368,750	0.85	42
276,500	0.80	57
138,250	0.58	36
138,250	0.58	36
69,125	0.49	29

strength of the emulsion is further shown in Table 2, in which both the opsonic bacillary index (Wright) and the percentage index (Simon) are worked out:

TABLE 2.

No. of cocci per c.mm.	No. of cocci per leucocyte		Percent. of phagocyting cells.		Wright's index.	Simon's index.
	Patient's serum.	Pool.	Patient's serum.	Pool.		
3,750,000	2.54	3.15	87	82	0.80	0.94
1,875,000	1.68	1.90	68	70	0.88	0.85
937,500	1.26	1.36	58	65	0.90	0.89
468,750	1.02	1.78	50	45	1.30	1.11
234,375	0.73	0.71	37	33	1.02	1.05

2. What effect has the period of incubation on phagocytosis? To determine this point charged pipettes were incubated for varying periods of time at 39 C. The phagocytic index and the percentage of phagocyting cells were then determined as usual. The strength of the bacterial emulsion corresponded to 937,500 cocci per c.mm.

TABLE 3.

Period of incubation.	No. of cocci per leucocyte.	Percent. of phagocyting cells.
15 minutes.	1.36	65
30 minutes.	2.24	65
45 minutes.	2.80	87
60 minutes.	4.00	90
90 minutes.	4.01	90

The results show that with a long exposure both the phagocytic index and the percentage of phagocyting cells undergo a distinct increase, the maximum being reached in one hour. After two hours the degenerative changes in the leucocytes become so extensive that accurate observations are rendered impossible.

3. Does phagocytosis occur at room temperature, viz., from 13 to 15 C.? Pipettes were charged as usual and left for varying periods of time as indicated in Table 4.

TABLE 4.

Period of exposure.	No. of cocci per leucocyte.	Percent. of phagocyting cells.
One hour.	0.18	14
Two hours.	0.76	35
Three hours.	0.89	36
Six hours.	1.22	47

This shows that phagocytosis does occur, but that an exposure of fully six hours is necessary before the extent of phagocytosis reaches those figures which we usually see after fifteen minutes exposure at body temperature.

4. What effect has the number of persons composing the pool on the opsonic index? In determining the above question the sera of ten healthy persons were collected and mixed in equal proportions, thus giving ten pools, containing from one to ten sera. With these the opsonic index was determined, using an emulsion of the *Staphylococcus aureus*. The normal serum gave 56 per cent. of phagocyting cells, with an average number of cocci per leucocyte of 1.14.

Table 4 shows plainly the advantages of Simon's percentage index over Wright's bacillary index, which latter will vary to a greater extent if cells are included in the count in which maximal numbers of organisms are contained, which is frequently almost unavoidable, owing to the difficulties which attend the preparation of perfectly homogenous emulsions. With specially satisfactory emulsions the two indices practically coincide. It is apparent that Simon's index is thus a check on the bacillary index.

TABLE 5.

Pool.	Percent. of phagocyting cells.	No. cocci per leucocyte.	Wright's index.	Simon's index.
One person	62	1.24	0.91	0.90
Two persons ...	57	1.18	0.96	0.98
Three persons..	60	1.42	0.80	0.93
Four persons ..	56	1.16	0.98	1.00
Five persons ...	64	1.19	0.95	0.87
Six persons	71	1.52	0.75	0.79
Seven persons..	58	1.11	1.00	0.96
Eight persons ..	60	1.40	0.81	0.93
Nine persons ..	68	1.48	0.77	0.82
Ten persons....	71	1.52	0.75	0.79

If we interpret the finding in Table 5 in this sense, the variations in Wright's index are readily explained, and it follows that a simple or at most a double mixed pool is necessary for ordinary purposes, a conclusion to which I believe Wright himself has come.

5. What effect has the age of the culture on phagocytosis? An emulsion (a) was made from a 46-hours-old culture containing 2,350,000 cocci per c.mm., and a second emulsion (b) from a 42-days growth containing 3,380,000 cocci per c.mm. In the first instance the average number of cocci per leucocyte was 4.84 and the percentage of phagocyting cells 95, while in the second case the phagocytic index was 9.6 and the percentage of phagocyting cells 99. It follows that the aging of the culture does not lead to a drop in the phagocytic or percentage index.

6. What effect has boiling and the addition of preservatives to bacterial emulsions on phagocytosis? The above emulsion (a) was placed in boiling water for 30 minutes, after which the phagocytic index was 7.18 and the percentage of phagocyting cells 96. This heated culture was then preserved for 3 days with about 0.25 per cent. of lysol. The average number of cocci per leucocyte was now 2.81 and the percentage of phagocyting cells 77.

One portion of emulsion (b) was similarly preserved with thymol and the remainder with chloroform for 3 days. In the first instance the phagocytic index was 8.03 and the percentage of phagocyting cells 95, and in the second 8.43 and 98 respectively.

This shows that boiling, thymol and chloroform have no inhibitory effect on the opsonic values, so far as the usual technic goes, while lysol seems to produce a decrease.

7. How long do the opsonins remain active? In other words, how long can the serum be kept before examination using the small quantities which are usually taken?

The results show that the serum loses one-half of its opsonic power in 24 hours; after this there is practically no further loss in the following 24 hours. The value then rapidly drops, but, however, does not wholly disappear until after 5 days. It is to be noted that the serum was collected and kept in a sterile condition. (Table 6.)

How long do the corpuscles retain their capacity for

TABLE 6.

Age.	Phagocytic index.	Percent. of phagocyting cells.
Fresh serum	4.08	92
Twenty-four hours old.....	1.92	72
Two days old.....	1.90	70
Three days old.....	0.39	22
Four days old	0.39	19
Five days old	0.14	8

phagocytosis? In this instance also the corpuscles were kept sterile and fresh serum used in every case. (Table 7.)

TABLE 7.

Age.	Phagocytic index.	Percent. of phagocyting cells.
Fresh corpuscles	1.09	45
Twenty-four hours old.....	0.61	29
Two days old	0.30	18
Four days old	0.09	8

The results show that only fresh corpuscles can be used in opsonic work, and my experience has been that after six hours many of the cells are dead and that fallacious results are obtained if such cells are used.

9. How many cells must be counted in order to obtain a satisfactory result? Emulsions of various strengths were prepared, and both the bacillary and Simon's index determined for 25, 50, 75, 100, 150, 200, 300 and 400 cells respectively. The results are shown in Table 8.

TABLE 8.

A. Emulsion of 2,000,000 cocci per c.mm.:

Cells counted.	Wright's index.	Simon's index.
25	1.00	1.26
50	0.97	1.00
75	0.96	1.00
100	1.69	1.02
150	1.16	1.12
200	1.23	1.20
300	1.18	1.11
400	1.27	1.15

B. Emulsion of 666,666 cocci per c.mm.:

Cells counted.	Wright's index.	Simon's index.
25	1.85	1.18
50	1.32	1.16
75	1.03	1.00
100	1.25	1.02
150	1.30	1.02
200	1.12	0.97
300	1.13	1.04
400	1.06	1.00

C. Emulsion of 222,222 cocci per c.mm.

Cells counted.	Wright's index.	Simon's index.
25	1.20	0.60
50	1.62	1.14
75	1.75	1.27
100	1.75	1.26
150	2.21	1.60
200	2.15	1.70
300	2.00	1.62

D. Emulsion of 74,074 cocci per c.mm.:

Cells counted.	Wright's index.	Simon's index.
25	No index.	No index.
50	0.66	1.00
75	0.50	0.62
100	0.57	0.70
150	1.14	1.26
200	1.18	1.15
300	0.95	0.96
400	1.05	1.11

The results show that with weak emulsions the chances of error are greater than with stronger emulsions, bearing in mind that with too rich emulsions counting becomes difficult, if not impossible.

In these experiments, likewise, the advantage of Simon's index is at once apparent, although with the weaker emulsions it also becomes somewhat uncertain.

In conclusion I wish to express my appreciation to Dr. Charles E. Simon, at whose suggestion the above experiments were undertaken.

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Induced Hyperemia in Treatment of Acute Infections.—G. Fichera publishes in the *Policlinico*, xiv, 6, 1907, the results of extensive experimental and clinical research on the efficacy and the mechanism of Bier's stasis hyperemia. His article is illustrated and is accompanied by nearly 8 pages of international bibliography on the subject. His conclusions are to the effect that the hyperemia induced retards the circulation through the part, while the transudation and diapedesis impede the general invasion of the organism by the bacilli. At the same time as the medium becomes less favorable for them, they fall a prey to the migrating leucocytes as phagocytosis is exceptionally active under these conditions.

GONORRHEAL PROSTATITIS.*

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The constancy with which prostatitis occurs when gonorrhea invades the posterior urethra, and the persistent nature of that inflammation after the subjective symptoms, and the more evident of the objective symptoms, have subsided, give this condition the right to more consideration.

That a gonorrheal inflammation of the posterior urethra ever occurs without involving the prostatic ducts to a greater or less degree seems unlikely. Anatomically, there is little to invite a posterior urethritis to the exclusion of the prostate. The character of the epithelia, the scarcity of mucous glands, and the almost vertical direction of the canal, which is distended so much of the time with urine and made one with the bladder cavity, are factors against a theory that the prostatic urethra can be affected with a gonorrheal infection without the prostate participating.

Acute gonorrheal prostatitis—the division of this affection into the catarrhal, the follicular, and the parenchymatous forms—may well be accepted as expressing the clinical varieties, providing the tendency of one form to merge into another is appreciated.

CATARRHAL PROSTATITIS.

This form is by far the most frequent of the acute varieties. It is highly probable that with every posterior gonorrhea there is some involvement of the prostate and though it may extend but a short distance into the prostatic ducts and be relatively mild, it is obvious that its existence should be appreciated.

The symptoms of catarrhal prostatitis go hand in hand with the symptoms of posterior urethritis—the increased desire to urinate, the cloudiness of both portions of urine, and the characteristic small, round and comma-shaped shreds which so often appear. These filaments, when examined microscopically, are usually small plugs or casts made up of mucus, pus cells, cuboidal and cylindrical epithelia, and gonococci. The prostatic origin of these shreds is not difficult to prove. If after a portion of the urine is voided light digital pressure is made on the prostate, the shreds are squeezed into the urethra and carried out with the urine which is then passed.

The danger of manipulating the prostate during an acute inflammation of that organ is ever to be borne in mind on account of its tendency to produce not only an acute epididymitis but an extension of the prostatic involvement as well. The clearing up of the acute posterior urethritis is, I believe, seldom accompanied with a resolution of the catarrhal prostatitis. Its tendency is to go on to a chronic condition.

The diagnosis must usually be made by the urine, as examination of the gland by the rectum frequently fails to show any change in size or consistence or give any areas of tenderness.

FOLLICULAR PROSTATITIS.

This may be an extension of the catarrhal form or it may follow directly the onset of an acute urethritis posterior. The process of inflammation extends in a selective way along certain ducts toward the periphery of the gland, and usually in its upper part, there to establish, by purulent or cystic distension of the alveoli, the small nodules or tender areas detected by digital exami-

* Read before the Section on Genito-Urinary Diseases of the New York Academy of Medicine, November 21, 1906.

nation. The symptoms accompanying this phase of acute prostatitis are not unlike those of the previous variety—increased and usually painful urination, the pain intensified at the close of the act; both urines cloudy; and the comma-shaped shreds, which are seldom absent.

Follicular prostatitis, like the catarrhal, tends to become chronic. The treatment during the acute stage consists in the treatment of the urethritis, by the avoidance of bodily exercise, by the avoidance of local manipulation of the prostate, and by the avoidance of constipation, and the institution of such measures as will tend to reduce the existing congestion and inflammation.

PARENCHYMATOUS PROSTATITIS.

In its milder forms this is clinically identified by the hyperemia or congestion of the entire gland. By the rectum the prostate is felt to be evenly swollen and smooth, and its consistence is elastic or edematous, though, from time to time, only one of the lateral lobes is found thus affected.

Although the organ is distinctly sensitive to pressure there is no sharp pain, but the patient experiences a sense of fullness in the perineum. Urination is made more difficult and painful and defecation is attended with pain and discomfort. There is no fever. The condition under appropriate treatment may subside in a few days and all subjective symptoms disappear or it may go on to chronic prostatitis or take on the progressive course which we recognize as the severer form of parenchymatous prostatitis, and which at times ends in abscess formation. Here we find a patient suffering with a painful sense of pressure and swelling in the perineum and rectum. Micturition usually becomes difficult and painful, though in some cases this is absent, while in other cases there is complete retention. Pain may radiate to the glans penis, to the thighs or across the back. Defecation may be very painful and erections and pollutions distressing. Fever may be present and accompanied by chills, though Casper had 21 cases which went on to prostatic abscess, and among them only four had a rise of temperature. On palpation the neighboring parts are found extremely sensitive, while the rectal examination of the prostate is exquisitely painful.

The gland is found swollen to twice or four times its normal size. It feels hot and is hard and tense, being sharply defined against the surrounding softer structures. Its surface is smooth, seldom irregular and one side only may be affected.

Notwithstanding the severity of the process, it may not go on to abscess formation, but, in from one to two weeks, the symptoms may subside and resolution take place. This, fortunately, occurs in the larger proportion of cases, which then go on to a chronic condition.

When suppuration does occur, the clinical picture usually becomes intensified. The pain on urination is increased, ischuria is common and the prostate becomes a pulsating and painful tumor. Rectal tenesmus is constant. The temperature rises, the tongue becomes dry, thirst is intense and the appetite gone; headache and backache ensue. Thrombosis of the periprostatic venous plexus, or in the prostatic veins themselves, may take place and go on to a typical occurrence of pyemia. It is usually not difficult to detect suppuration in the inflamed prostate.

Surgical interference is at this moment demanded. If it is delayed, the abscess usually empties itself, and most commonly into the urethra. The urine then becomes loaded with the products of suppuration, and the fever, the dysuria and the rectal tenesmus rapidly subside. It may be that the evacuation of pus is incomplete, and in this instance the disappearance of symptoms is delayed and the process may proceed to a chronic condition. Complications, such as infiltration of urine, gangrene, chronic septicemia, or fistula, at times ensue.

Next in frequency to the urethra as an exit for the pus, come the rectum and the perineum in the order given. In Segond's collection of 102 cases, perforation occurred 64 times into the urethra, 43 times into the rectum, 15 times into the perineum, 8 times into the ischiorectal space, 3 times in the inguinal region, twice through the obturator foramen and once each through the navel, through the ischiatic foramen, at the border of a false rib, into the abdominal cavity and into the space of Retzius. The after-results of prostatic abscess may be chronic suppuration, neurasthenia, impotentia generandi, stricture of the rectum, etc. It is to be borne in mind that besides the complications which not infrequently attend suppurative prostatitis the mortality is considerable. In the 102 cases of Segond's referred to above, there was a 34 per cent. death rate. This is, however, considered very much too high according to other observers.

The treatment of these severer forms of parenchymatous prostatitis is both general and local. The patient should be put to bed, a light diet given and the lower bowel kept empty. Urinary antiseptics should be given and warm applications or sitz baths prescribed. Early in the process the direct application of cold to the prostate by means of one of the instruments designed for that purpose is often apparently of great benefit. The severer pain and dysuria must be controlled by opium or its alkaloids. A complete retention of urine demands catheterization. With the breaking down of the process into abscess formation comes the necessity for surgical relief.

CHRONIC PROSTATITIS.

This condition assumes a degree of importance which the acute varieties cannot approach. On the score of infectiousness acute prostatitis is little to be feared, as the active and painful nature of the condition renders the individual practically incapable of sexual intercourse. On the other hand, chronic prostatitis, which is so often wholly devoid of subjective symptoms, is probably a fertile source of the infection of women. In this connection it is to be especially noted that the great majority if not all of the acute inflammations of the prostate pass on to a chronic condition.

To divide chronic prostatitis, of which the chief etiologic factor is the gonococcus, into pathological and clinical varieties is of little moment. Clinically, the disease gives little evidence that can be put down as surely characteristic of one or another variety, and pathologically we usually find, in the same prostate, changes belonging to various forms of inflammation. At the same time the fact is not to be overlooked that chronic gonorrheal prostatitis varies much in degree and in resistance to treatment.

Symptoms.—The majority of cases of chronic prostatitis run a mild course without subjective symptoms, the patients voiding perfectly clear urine. In others the symptoms are so well masked by the persistence of a urethritis that a precise diagnosis is difficult. In the remaining class, however, some of the characteristic symptoms appear: Disturbance of urination, the changes in the sexual function, abnormal sensations, referred pains,

neurasthenia, suffering from pains across the back, down the thighs or in the testicles, constipation, pain before and after defecation, headache and mental depression. With some patients frequency of micturition, which may be attended with pain, is the most prominent symptom and to this may be added the sense of not having completely emptied the bladder. With other patients the disturbances of the sexual function seems to stand out as the chief difficulty, such as absence of normal sensation at the moment of ejaculation, pain with the seminal discharge, distressing and persistent erections at night, premature ejaculations and decreasing sexual ability. It is in these individuals that we most frequently see the best marked types of sexual neurasthenia.

Some authors hold that prostatorrhea is one of the chief symptoms of chronic prostatitis. The writer's experience coincides with those who consider prostatorrhea as an unusual occurrence in this condition. The combination of chronic prostatitis and cystitis is by no means uncommon. In these cases the treatment of cystitis without recognition of the prostatitis, and attention to it, proves very disappointing.

All cases of persistent urethral discharge or a persistent morning drop or those cases with a chronic and constantly recurring discharge, should be suspected and examined for prostatitis.

Diagnosis.—Although the subjective symptoms give a valuable clue to the condition, an exact diagnosis cannot be made without digital exploration of the prostate by the rectum and what is more important, microscopic examination of the expressed prostatic secretion.

A knowledge of how the normal gland should feel in the different periods of life is essential to the appreciation of size, configuration, consistence and sensitiveness of the diseased organ. The changes in prostatitis noted by palpation are many. The gland is usually larger than normal, although this is by no means always the case, for in some instances it is found markedly atrophic. Frequently one lateral lobe only is affected, or the organ may be very irregular in outline and feel as though it were made up of many lobes. Nodulation may be abundant or there may be but one or two nodes and these may vary in size, consistence and location, but they are usually about the size of a pea, hard, and situated nearer the upper part of the gland. The general enlargement of the prostate which results from a parenchymatous prostatitis usually gives an edematous feel to the organ, having lost its normal firm and elastic consistence, it becomes, as some authors put it, flabby, this varying much in degree.

The condition following the follicular form is varied. The gland, as a rule, is not so large as in the postparenchymatous condition, but is usually harder, while here and there distinctly soft spots may be felt and the nodules are few or many, localized or scattered, as the case may be. Where there has been suppuration with escape of the pus, involving the whole gland, or one lateral lobe, or as in the follicular variety, small areas, the characteristic changes of contraction and firm cicatrices result and give that sense to the examining finger. In other cases there is no change in the prostate that can be appreciated by digital exploration, and no degree of sensitiveness; in these cases the diagnosis depends alone on the study of the prostatic fluid. Pain on palpation of the prostate is generally a sign of disease, but by no means always, and painful areas are not infrequently found in prostates otherwise negative to the digital touch.

The secretion which is collected at the external urinary meatus upon digital compression of the prostate, after the urethra has been cleansed by urination or irrigation, consists normally of a thin, milky fluid, at times slightly viscid. Its specific gravity is but little higher than that of water, it is usually faintly alkaline to the litmus test, and consists microscopically of lecithin globules, varying in size and usually present in great numbers, and epithelia which are partly cuboidal and partly columnar. A few leucocytes are normally present and occasionally some red corpuscles. Hyaline bodies of considerable diameter and the so-called *corpora amylacea* are not infrequently seen.

The changes from normal which most commonly take place in the prostatic fluid are in consistence and color. It becomes thicker, often flaky and yellowish or greenish-yellow from the addition of pus. Under the microscope there are added to the field of lecithin bodies pus corpuscles in varying numbers, scattered or in clumps, depending on the extent or kind of inflammation. In like manner epithelia from the ducts and alveoli are added, and these in different stages of degeneration. Fat globules may be seen free in the field or in the epithelia or pus cells.

The *corpora amylacea* seem to be much less frequently seen in gonorrheal prostatitis. It is to be especially remembered that as long as the presence of pus cells can be demonstrated a pathologic condition exists. Gonococci may be found in the pus cells and the fact that we cannot find them is not proof of their complete disappearance.

Prognosis.—When is the danger of infecting others past? When is a chronic gonorrheal prostatitis cured? To these questions no clean cut answer can be given.

When the urine contains no more shreds or other abnormal elements, and the prostatic fluid is free from pus cells, and repeated search for gonococci with the microscope and by culture test fails, certainly we have no grounds on which to maintain that the patient is still afflicted with an infectious disease. But on the other hand, we cannot positively say that such individuals have become noninfectious.

After a few months or a year we find, in a large number of the cases, the presence of gonococci impossible of proof. Unfortunately, the mixed infection, which almost always complicates these cases, renders the task of clearing the prostatic fluid of pus cells exceedingly difficult, if not impossible. Although it has been stated that so long as pus cells remain a pathologic condition exists, yet experience has taught that these cases are by no means always infectious.

From the observation of 120 cases, von Notthaft has come to the following conclusions:

1. In the second half year after the infection there was 73 per cent. of the cases in which the gonococci could be proved to be present in the prostatic secretion. In the third half year this percentage fell to 50, in the fourth half year to 18, in the third year to 6. From the end of the third year no gonococci could be found in the prostatic secretion.

2. In the second half year there were other bacteria besides gonococci found in the prostatic secretion. In the fourth half year there were no cases in which a pure gonococcic infection could be demonstrated.

In a few patients from whom the writer made cultures the results were in accord with Notthaft's series so far as mixed infection was concerned, but in none of the writer's cases were gonococci found by either the microscope or culture, yet in five cases out of the eight, considerably over 50 per cent., the infection was less than 18 months old. In 7 out of the 8 cases there was a

growth of *Staphylococcus albus*, and in two of these there was added a growth of *Bacillus xerosis*. In one case there was no growth.

The conclusions to be drawn are that there is difficulty in proving the presence of gonococci in these older cases of chronic gonorrhoeal prostatitis, and that other organisms play an active part in the bacteriology of this affection.

Treatment.—Where a urethritis exists, either anterior or posterior, therapeutic measures designed for the cure of this condition must be instituted. For the treatment of the chronically diseased prostate, massage of that organ by the rectum, constitutes the most important element of the treatment. The bladder should be filled with some such mildly astringent antiseptic as protargol, ½of 1 per cent. solution. In very many cases dilatation of the prostatic urethra, either by sound or dilator, is helpful in the treatment by virtue of the internal massage and stretching it exerts, especially on the mouths of the prostatic ducts.

Digital massage, to be useful, must be done in a systematic and purposeful manner. Starting at the external upper part of the lateral lobe, the massaging finger-tip works its way toward the median line of the gland, again it is carried to the external border, immediately below the previous path of massage, and again worked toward the center. This is continued until each lateral lobe has been thoroughly gone over. Then the finger is swept over the lateral lobes downward and toward the center, emphasizing the pressure brought to bear on the median line, that the secretion may thus better be expressed into the urethra. The patient then voids the solution which has been left in the bladder, which thus washes out the urethra and comes in contact with the recently emptied prostatic ducts, which as some think, may take up some of the solution on the principle of a sponge which has been compressed and is allowed to expand while in contact with a fluid. This massage has two distinctly beneficial elements. It empties the alveoli and their ducts of the perverted secretions which have accumulated, and it stimulates a more active circulation throughout the entire gland.

Again a warning against the danger of extending the process in massaging a prostrate in which there still exists any active inflammation.

The massage which is done very gently at first, should be repeated once, twice or sometimes three times a week, depending on the necessity of the case. A few weeks' period of treatment for the milder cases up to many months of treatment for the severer cases, is required. Besides massage, such measures as electricity or heat and cold applied to the prostrate may in certain instances be helpful. Medicinal suppositories as ichthyol, have a useful place in the treatment of prostatitis.

The advancement of the patients' general condition cannot be neglected and freedom from worry or other untoward influences must be secured. Favorable progress of the prostatitis is appreciated partly by the changes in the gland felt by the rectum, but more especially by the study of the prostatic elements microscopically. Improvement in subjective symptoms is unreliable.

Although the treatment is usually long and trying, taxing the patience of the physician and his patient, yet with well directed and conscientious care on the part of the physician and earnest coöperation on the part of the patient, the latter will be freed, in the greater majority of cases, from the danger of infectiousness and other consequences of chronic gonorrheal prostatitis.

TRAUMATIC NEUROSIS.*

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Traumatic neurosis is a nervous disease following injury, in which there is no demonstrable structural lesion of the nervous system. The symptoms are much like those of the common functional diseases of the nervous system, and may be spoken of as traumatic hysteria or traumatic neurasthenia. Commonly, however, we find symptoms of both of these disorders in the same patient and not rarely the clinical picture may not be that of either of them.

Litigation is a frequent complication which materially affects the clinical history. It, not rarely, warps the judgment of the physician, and may doubly influence the patient, the many attendant conditions disastrously affecting his nervous system, while the money dangling over his head leads him, consciously or unconsciously, to distort his symptoms.

The following cases are typical of a common form of traumatic neurosis, and a long period of observation gives special value to their study. I append some consideration of special points of interest relating to the disease.

CASE 1.—Mrs. L., music teacher, aged 45 at time of injury, November, 1899.

History.—She was in a street car collision, a runaway car colliding with the one in which she was riding. A physician found her fifteen or thirty minutes later lying on the floor of the car, in a dazed condition, with several cuts on her face and forehead, made by broken glass. She was confined to bed for one or two months and invalided thereafter. Her chief symptoms, and those she still presented when I saw her, were of a neurasthenic type: Insomnia, restlessness, irritability, great sensitiveness, weak memory, lack of endurance, and incapacity for thought or action. In addition she was very weak on her feet, had little use of the right hand, and there was a certain immobility of the head, because its movement caused pain in the cervical spine.

Examination.—I examined the patient in February, 1901, fifteen months after the injury had been received. The examination was made at the request of her lawyer, as a suit for damages had been instituted. The marked objective symptoms were a right hemiplegia and hemianesthesia. The motor paralysis affected only the arm and leg, and not the face. The gait was characteristic of hysteria, the paralyzed limb dragging behind instead of presenting the outward sweep of ordinary hemiplegia. The sensory loss was of all qualities of sensation, touch, pain, temperature and muscular sense. In the face the anesthesia reached to the median line. On the extremities only a part was affected. On the arm the ulnar side was anesthetic, the radial was normal. On the leg the outer side was anesthetic, the inner was normal. The special senses were also affected; there was loss of taste and smell on the right side, deafness of the right ear, and amblyopia of the right eye. There was, also, anesthesia of the mucous membranes on the right side, and, still more striking, loss of the corneal, nasal and pharyngeal reflexes. For instance, strong snuff in the right nostril gave no response, while the same applied to the left caused immediate and violent sneezing. The deep reflexes, knee-jerks, as well as pupillary reactions and optic discs, were normal.

As this case was in litigation tests were made to determine the genuineness of the symptoms. That of the nasal reflexes has already been mentioned. The patient complained of great tenderness over the cervical spine and the genuineness of this symptom was proved by the considerable acceleration of the pulse, caused by pressure over the seat of tenderness. This is called the Mannkopf symptom. In the same manner one could

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demonstrate the feebleness of the patient, for a very little exertion caused considerable acceleration of the pulse. The latter was also a test of the genuineness of the anesthesia, for when I applied a strong current of electricity with the brush to the normal skin, the pulse was again accelerated, while the same, or even a stronger current, applied to the anesthetic skin did not affect the pulse.

The deafness and amblyopia were tested by Ziehen's method. I tested the amblyopic eye, also, by placing prisms and opaque discs before the sound one. All these tests proved the genuineness of the symptoms.

The lawsuit was held about one year after the time of this examination. In the meantime the changes that had taken place in the patient's condition had been rather for the worse.

The litigation resulted in a large award for damages, which was paid at once. I saw the patient several times in the next few months, but there was little if any improvement during that time. I recently heard from her physician—she does not live in Cincinnati—and he said that the motor paralysis had entirely disappeared, perhaps had done so two years after litigation was over; but he could tell me nothing regarding the anesthesia.

I have no knowledge of the objective symptoms presented by the patient prior to the time of my first examination, but, from what I could learn, I have no doubt they were more marked when I saw her than at an earlier period. Probably her condition became worse after litigation had been decided on. She became rather worse during the year between the time of my examination and the time of the trial. Thereafter, in the course of about two years, many or all of her symptoms disappeared. There can be no doubt of the marked influence of litigation on the course and progress of the case. At the time of my examination it appeared to me that there was a tendency to exaggeration of symptoms and that there was more muscular strength than she cared to make manifest. But there are no simple tests of the genuineness of motor paresis as there are of sensory impairment. The motor paralysis has disappeared. It would be of interest to know if the same is true of the sensory paralysis.

CASE 2.—Mrs. W., aged 48 at the time of injury, July, 1901, was injured in stepping off a car at night into a broken street. She fell backward, striking the back of her neck. She first called in her physician three days after the accident. He found bruises over the left shoulder and arm, and that she was suffering with pain in the left side and back of the neck. I have no accurate knowledge of the further development of symptoms; but she had various nervous symptoms and was finally sent to the Bethesda Hospital. She was in the hospital from October, 1901, to May, 1902, part of that time having decided mental symptoms, but she was finally sent home much improved.

Examination.—I saw her about two years after the injury, at the request of her lawyer, as a suit for damages was about to be tried. She presented the appearance of health, but was restless, irritable and excitable. She complained, also, of being unable to attend to her duties as housekeeper, and of having a poor memory, and much pain. There was great tenderness over some of the cervical and lumbar vertebræ; her gait was feeble; the dynamometer indicated 60 as the strength of the right hand, and 26 as that of the left; there was loss of the sense of pain over the whole of the left side, narrowing of the field of vision, loss of smell in the left nostril, and loss of pharyngeal and nasal reflexes on the left side. The knee-jerks, Achilles tendon reflex, and pupillary reactions were normal.

The genuineness of some of these symptoms, tenderness, analgesia, nasal reflex, etc., were demonstrated in the manner described in the report of the first patient.

As the result of the lawsuit the patient was awarded a large sum for damages. The case was appealed, and eighteen months later a settlement was made for less than one-half the sum awarded her by the jury.

Later Examinations.—I had the opportunity to make two further examinations of this patient, the first a year after the trial, but before a settlement had been made; the other recently, one and a half years after the settlement. At the time of the first examination she had improved very materially, but she was still neurasthenic and the objective symptoms were still present, though less marked. At the last examination, while there was even a greater improvement, she still complained that she was not so well as before the injury, and that there was some tenderness over the spine, and a degree of hemianalgesia.

It will be remembered that the patient did not consult a physician until three days after her injury and that the marked nervous symptoms appeared at a later date. I do not know what influences may have played a part in the development of her disease, but we can not go far amiss if we attribute to litigation a part of the condition found when I examined her.

CASE 3.—Miss T., aged 28 at time of injury, April, 1900, was caught and dragged by a rope which happened to be hanging from a passing wagon. She did not lose consciousness, but was considerably bruised, especially over the left hip and knee. She suffered much, was confined to bed for several months, and since then had symptoms much like those presented at the time of my examination.

Examination.—I was called by her lawyer to examine her in April, 1902—two years after the injury—at the time of an impending suit for damages. Her condition was as follows: She spoke of her memory being poor and of getting the "blues" easily, though she enjoyed seeing her friends and was generally cheerful. She complained, also, of severe backache and occasional headache, of poor sleep and little appetite. Menstruation was frequent and profuse.

I found her with rather a weak pulse, tremulous lips and tongue and manifestations of a left hemiplegia and left hemianesthesia. The left leg was considerably paralyzed; the left arm was awkward in its movements, but without manifest loss of power. There was impairment of tactile, pain and temperature senses in the left arm and leg as well as loss of smell in the left nostril, and amblyopia of the left eye. The genuineness of these symptoms was demonstrated in the manner already mentioned. The knee-jerks and Achilles tendon reflex were normal.

A few days after this examination the trial was held, resulting in a large award to the patient. The case was appealed and payment was not made until nearly three years later. I had the opportunity to examine the patient several times after this payment was made. The sensory symptoms remained unchanged, while the motor paralysis was more marked than at the time of my first visit. My examination on these occasions was a hurried one, and no effort was made to test the genuineness of the symptoms.

Sixteen months after the payment had been made, while the patient was visiting friends in the east, all her symptoms suddenly disappeared—in answer to prayer, she says.[1] It was a case that was heralded by the papers throughout the land.

I do not think there is any doubt of the influence of litigation in the course of this case.

I wish to add a brief history of a case much like the preceding ones, but in which the question of litigation did not arise.

CASE 4.—Mrs. M., aged 66 at the time of the injury, February, 1901, while sweeping the snow from her front steps, slipped and fell to the pavement, a distance of some half dozen steps. Her daughter picked her up and assisted her to her room on the second floor. Her strength at that time evidently was much greater than it was some days later, when, as her daughter states, she was practically as I found her nine months subsequently.

1. A physician recently made an examination at my request and found no objective symptoms. The examination was, necessarily, a cursory one.

Examination.—When I examined her she presented a right hemiplegia and hemianesthesia, but the motor paralysis did not affect the face; and the sensory paralysis was not complete; there was impairment rather than loss of sensation, the leg being most profoundly affected. In addition, the patient had much pain in the extremities, which doubtless accounted somewhat for their impaired use.

I had the patient under observation for a number of months during which time there was no improvement in her condition. I saw her again recently, nearly six years after the injury. In the meantime she had very markedly improved. The pains and anesthesia were almost gone, though a trace of the latter remained. The grasp of the right hand was still feeble, and the dorsal extensors of the foot and the flexors and extensors of the toes were paretic.

It may appear from these cases that this disease is found chiefly in females, and, possibly, this is true. But the appearance is accidental in this instance. Of a list of cases I had selected for this paper, cases alike in the type of symptoms and duration of the disease, I was unable to trace the male patients, and do not know their present condition. I was unwilling, therefore, to include them in this report.

The cases I have just reported might be termed traumatic hysteria, though they, also, have a neurasthenic element.[2] Among the symptoms are the most characteristic stigmata of hysteria, hemianesthesia, contraction of the field of vision, etc. There were also pains of various kinds and local tenderness, as well as symptoms of a neurasthenic type, such as lack of endurance, hypersensitiveness, emotionalism, irritability, depression and self-concentration.

I have given the clinical histories somewhat in detail because they are rather typical of a fair proportion of cases of traumatic neurosis, at least of those of some degree of severity and persistence and which are common subjects of litigation. Naturally other clinical pictures are often presented. Among the cases of the hysterical type, while hemiplegic manifestations are the rule, paraplegia occasionally occurs, or the symptoms may be distinctly localized, or there may be spastic phenomena, such as tremor, contraction and spasm.

In cases of the neurasthenic type we may find any or all of the symptoms common to neurasthenia. Often there are but a few symptoms, localized pains and tenderness, which may be the expression of local injury, and change of disposition, the patient being sensitive, irritable and morbid. Again, there are other cases in which the symptoms are so grave, for instance those of epilepsy or insanity, that we must believe there are profounder changes than those ordinarily found in traumatic neuroses.

DIAGNOSIS.

In diagnosis the question that confronts us is not so much whether or not we have a case of traumatic neurosis, for its manifestations are likely to force themselves on us, as whether or not we have, in addition, organic disease of the nervous system. We should always look carefully for all symptoms of the latter, but, no doubt, organic disease is often present when its symptoms elude us. In case of litigation the question naturally arises, have we to do with real diseases or only with simulation?

Simulation is not rare, and yet it appears to be the consensus of opinion among neurologists who have carefully studied the subject, that too much has been attributed to it. It is believed that an entire clinical picture such as I have above presented is rarely, if ever, simulated, while single symptoms possibly may be.

2. Cases 3 and 4 might be classed as simple hysteria.

In truth simulation is more likely to occur in those already ill, and, frequently, should be classed rather under exaggeration of symptoms, a phenomenon not rare in the sick, especially in hysteria, and which should not surprise us in this disease in which greed is offered such a tempting bait.

In the report of the first case I mentioned tests which may be applied when the question of simulation arises, and there are other tests for the same purpose. At the same time one must be careful not to be misled by such an examination. For instance, the Mannkopf symptom—acceleration of the pulse on pressing on a point of tenderness—is a positive proof of pain, but, at the same time, painfulness does not always accelerate the pulse.

PATHOLOGY.

There has been much discussion of the pathology of traumatic neurosis, but little has been actually established. The older conception, concussion of the spine, and the more common ones to-day, molecular changes and disarrangement of the nerve elements, mean little to us. The intracellular changes found in fatigue, and which may be the basis of hysteria and neurasthenia, as well as of traumatic neurosis, are still far from established in that pathologic relationship. It remains for the future to show whether or not there is some structural change in the nervous system in these cases. Arteriosclerotic changes are not rarely found, but very likely they are the result and not the cause of the disease, sometimes the result of long continued depressing emotions.

The pathogenesis is a more satisfactory subject to treat. Dana's dictum, physical bruising and mental shock, is pointed and, doubtless, correct. Mental shock is the most important factor. Football players and others accustomed to danger, or in a state of mental absorption at the time of injury, appear to be not prone to the disease, though they are not altogether immune. As predisposing factors to the disease a neuropathic disposition stands uppermost. Alcohol sometimes plays a part.

PROGNOSIS.

What is the prognosis of traumatic neurosis? Some figures of Putnam throw light on this question. They are based on the study of one hundred cases, with mainly hysterical symptoms, typical anesthesias, etc., in three-fourths of which the patients had instituted claims for damages. From three to twenty years elapsed between the time of injury and the final record of the case. Twenty-five per cent. of these patients remained more or less invalided. Sudden recovery was very rare. Knapp gives figures much less favorable than Putnam's. In not more than half of his cases did any improvement take place. In his array of cases the severer types of traumatic neurosis usually followed the severer injuries and vice versa.

The paraplegic type of traumatic hysteria has a less favorable outlook than the hemiplegic. Cases in which there is a marked mental element are also unfavorable, as well as those presenting decided vascular or cardiac changes.

Very frequently, however, the progress is influenced by extraneous elements, such as the environment and, above all, litigation. There are many things connected with litigation that have a decided influence on the patient's mind, such as the frequent examinations of physicians, the solicitous inquiries and advice of friends, the consultations of lawyers, the dread of the court, the desire for a financial award and anxiety as to the outcome,

perhaps a sense of injustice done them that their demand for damages is not readily granted, and the like. Such influences tend increasingly to fix the patient's mind on his impaired health and to produce all the ill effects of suggestion, while the natural result of the anxiety and other depressing conditions is steadily to lessen his nervous force and to impair his general health. For all these reasons litigation usually retards the favorable progress of the disease or leads to a change for the worse. It is a common experience that the physician can do little or nothing for his patient until litigation is over, and this is the more unfortunate because prolongation of the course of a nervous case often adds greatly to the difficulties of a cure. Perhaps the strongest proof of the influence of litigation in traumatic neurosis is the fact that in various countries cases of the disease appear to increase according to the success of litigation. The disease has even been attributed to litigation. That the latter is, in general, a false view I need not state. My own interpretation of the apparent proportion of cases to the frequency of litigation is that the latter tends to increase and to prolong the disease in the given case which otherwise would frequently have escaped attention.

TREATMENT.

The treatment of traumatic neurosis is, practically, that of hysteria and neurasthenia, and into that subject I need not enter. But I wish to consider some special questions which especially arise in the management of these cases.

In a symposium on traumatic neurosis at the 1900 session of the American Medical Association A. D. Bevan said that the medical attendant, more than any other factor, is responsible for the development and continuance of traumatic neurosis, and claimed that he had nipped such cases in the bud by what he, not inaptly, termed, brutal treatment, telling his patients nothing ailed them, forcibly putting them on their feet and compelling them to walk, and the like. While, in the main, I do not agree with his views, yet there are some practical and important lessons suggested by his severe strictures.

It is generally believed to-day that the main element in the production of this nervous disease is mental shock, and as a mental state lights up the disease it is scarcely to be doubted that other mental states have a powerful influence on either increasing and prolonging it on the one hand, or lessening or removing it on the other; hence the immediate and decided effect of the physician and the environment. If the acts and words of the physician and the environment are such as to cheer the patient, to inspire him with hope, to make him believe he will soon recover, all nervous symptoms may soon disappear, or at least be favorably influenced. If, on the other hand, the diagnosis of the physician suggests to him serious disease, and, in addition, the idea of litigation is thrust on him, his symptoms may increase and be indefinitely prolonged.

Let me speak briefly of a patient who has just left my hands:

History.—A man, with hysterical antecedents, received an injury to his head, evidently a slight one, but probably followed by a fright. He fainted and, according to his physician's account, was thereafter extremely emotional, complained of severe pain in his head, and was, at times, in a state of mental confusion.

He was sent to me ten days after he was hurt, with the statement that it was uncertain whether he had serious injury to his brain or not. He complained bitterly when I saw him; and he had, besides, a degree of left hemiplegia and left hemianesthesia. He stated that the latter, that is, a sense of numbness and weakness in the left side, came on the second or third day after the injury. He ha., in the meantime, been among anxious relatives and friends. He was immediately removed from all such influences; and his further treatment consisted chiefly of encouragement and suggestion, with the assurance that he would soon be well. Before many days he returned to his home apparently in perfect health. One can scarcely doubt that with suitable cultivation of the symptoms, especially if litigation had been added, chronic invalidism might have ensued, in which respect the case is probably typical of much that does occur.

Do not misunderstand me. This was a mild case, and, therefore, such a rapid disappearance of symptoms was possible. Had it been a severe one the result might have been different, at least so speedy a recovery could not have been expected.

But, nevertheless, the case serves as a text to my sermon, that the physician should constantly bear in mind the great influence of mental impressions on functional nervous disease, especially in a case of this kind. The physician should aim to remove the patient from depressing environment, particularly from among emotional and anxious friends; he should avoid saying anything unfavorable as to the outcome, but rather should give the most cheerful, hopeful outlook possible, and, above all, he should remember the disastrous effect of litigation, and if justice to the patient demands a lawsuit the latter should be kept in the background of the patient's consciousness so far as possible.

I wish to direct attention to only one other measure in treatment, and that is work. Oppenheim's statement that in mild cases work is sometimes curative, but in severe cases the patients should do little or no work, I think must be accepted as true. It would be fortunate, indeed, if when needed, work could more easily be found apportioned to the patient's working capacity. It is often thought that early return to work is a sure means of restoring health. Oppenheim says that too early resumption of work is an unfavorable factor in prognosis.

While writing this paper I saw a woman who suffered rather a severe injury eleven years ago, which was followed by nervous symptoms. Need compelled her to go to work—she is a saleswoman—soon after the injury. She is now suffering much as she did when I saw her nine years ago, and she attributes this to the fact that she had to return to work so soon, an opinion that is probably correct. There are many cases like hers, that is, people who are at work but still sufferers, and who yet are looked on by the world as in good health.

It would be interesting to know of the cases on which Bevan based his opinion of the value of "brutal treatment," how many of the patients are really well and how many have been injured by the treatment.

In deciding the question of work we should be guided by the character and needs of the case. In treating functional nervous diseases it is well to be guarded against extreme views, such as that rest treatment is always needed or that work is the only cure. A degree of rest is probably always indicated in nervous cases and complete rest in some instances, but by no means in all. On the other hand, diversion is usually essential, that is, something that will take the patient away from morbid thought, from self-absorption and from the possibilities of autosuggestion. For the latter purpose we rely on recreation, amusements and in some cases, most of all on work. Work counts especially when the patient has few resources within himself, or when he can not be inter-

ested in other things, and may be especially of value in traumatic neurosis through taking the thoughts away from litigation.

In deciding this question in a given case we should judge first of the strength of the patient by observing the effect of exercise on his pulse and breathing, often we shall be influenced by whether work is the one diversion that is effective in his case, and sometimes we are controlled by the patient's financial needs which may compel him to resume work sooner than his condition justifies.

Clinical Notes

ACCIDENTAL INOCULATION WITH THE VIRUS OF PLAGUE.

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Last fall, as the unfortunate result of the accidental contamination of the cholera vaccine with a culture of plague bacilli, a number of natives were inoculated with plague and several died. The occurrence makes of interest the following account of the work with the cholera vaccine.

For the last three years Dr. Richard P. Strong of this bureau has been working on a cholera vaccine which consisted of an extract of the killed, digested and filtered organisms, later modified to a mixture of such an extract with one obtained by shaking on a shaking machine the living organisms in distilled water and then filtering. Obviously this product is always carefully tested and is absolutely sterile and the health department has used it on about seven thousand persons in the Philippines. One-half of the prisoners in the government prison at Bilibid were vaccinated with this vaccine and one-half unvaccinated. The same was done in a number of villages in the surrounding territory. Needless to state, no bad results followed from these vaccinations. There is a moderate general reaction following the inoculation, but the local reaction is very slight. The reaction from vaccination with this cholera vaccine is not as serious as that which frequently follows the smallpox vaccination, yet a high blood immunity results.

Subsequent experiments in the town of Angat, where one thousand and seventy-eight persons were vaccinated, showed that after vaccination there were one hundred and twenty-two cases of cholera, one hundred and twenty-one of which were among the unvaccinated and only one among the ones vaccinated. In the prison we had no further epidemic of cholera after the vaccination, but no conclusions can be drawn because the cholera was stopped by sanitary measures. It may be stated, however, that since the vaccination we have had twenty cases of cholera, eighteen of which were among the unvaccinated and two among the ones vaccinated.

Dr. Strong continued his work on immunity against cholera by vaccination, as he was convinced that this means was one which would aid in the prevention of large epidemics in the future, since it is known that apparently healthy people frequently carry about in their intestines cholera spirilla, which are passed in the stools, and hence quarantine and sanitary measures can not always be considered effective safeguards against a cholera epidemic. Certainly the end sought for is a great one and the results satisfactory.

Last year, in a medical congress at Berlin, the method of vaccination by means of the entire organism and not by its extracts was advocated. Haffkine has urged the use of the living organism and believes that by its use a higher immunity can be obtained. Dr. Strong, of necessity to complete his argument, needed to make some vaccinations by this method, as he was convinced that it was not superior to the one generally employed by this laboratory, but, obviously, with such arguments in literature, others would come forward attacking his results. In employing the living organism it is necessary to use a 24-hour old culture owing to the fact that after this time changes take place in the culture owing to the formation of ferments, death of a large number of bacteria, etc., and consequently, while the method allows of every test as regards the purity of the cultures up to 24 hours before their use, after this time (when many cultures are employed) no satisfactory test of its purity can be made and no test on animals can be carried on, since the cultures must be inoculated 24 hours after their preparation. Inoculations had been carried on in Bilibid several days without accident. On the day of the misfortune twenty-four men were inoculated, but this was not compulsory. The history of this vaccination is about as follows:

The culture was carefully carried out and identified, and was known to be a pure culture of the cholera organism up to 24 hours before the time when the vaccination was made. A large number of tubes of cholera media were inoculated from these pure cultures and placed in the incubator. On the following morning the cultures were each suspended in one cubic centimeter of saline solution, the whole mixed, and inoculations, as was necessary, made immediately after the preparation of the suspension. It is supposed that some one placed a 48-hour virulent plague culture among the cholera cultures, the blue pencil marks which designated the culture having been erased from the glass by handling. This view is supported by the fact that on the afternoon of the day of inoculation a 48-hour virulent culture was missed from the incubator. It was known certainly that one of the five plague cultures prepared two days previously, as was shown by Dr. Strong's note-book, had been removed from the incubator, but it was not until two days later, when he wished to examine the opsonic index of five guinea-pigs, for each one of which a 48-hour richly-grown culture had been prepared, that the plague culture was missed.

It was proved by a technical committee of three physicians appointed by the governor-general to investigate the matter that a 48-hour richly-grown plague culture spread over the entire surface of the entire slant resembled some of the cholera cultures so strongly that they were unable to identify or to pick out such a plague culture by its gross appearance when it was placed among a number of the cholera cultures of the strain employed. It was also shown that a hanging-drop preparation and the stained microscopic one made from the mixed suspension of all the cholera cultures contaminated with the plague one (as used for the human inoculations) did not reveal the suspicion that the fluid was contaminated with plague bacilli, since no bi-polar staining organisms were visible and, evidently, the plague bacilli were in too small numbers or those present did not show any sufficiently distinctive morphology to separate them from the plemorphic cholera organisms in the saline solution. Nevertheless, this same suspension, in which plague bacilli were not detected by microscopic

examination, when injected subcutaneously into guinea-pigs and a monkey, caused, after several days, death from plague infection. It has not been ascertained who placed the plague culture among the cholera ones after all possible tests of the cholera culture had been made. An investigation of the entire matter was pursued by the government prosecuting attorney at our request, and later the governor-general, in order to satisfy public opinion, appointed a committee of eight, six Filipinos, one American and one Englishman, three of which committee constituted a technical committee, for investigation.

While the serum division of this laboratory is also in charge of Dr. Strong, and while this division prepares our regular cholera vaccine, it must be clearly understood that the regular preparation of our cholera prophylactic had absolutely no connection with this matter and that the vaccine used by Dr. Strong on the day of the accident is entirely distinct from the preparation with which he is identified. The method used on the last twenty-four prisoners is the one which is best known by the names of "Ferran" and "Haffkine." It is perhaps unnecessary to add that the laboratory has prepared several million units of vaccine virus and several thousand doses of plague prophylactic which have been used (in addition to the cholera prophylactic) with good results and without accident.

A NEW NASAL DRESSING.

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OSKALOOSA, IOWA.

I think it will be generally admitted that the ordinary methods of packing the nasal cavities after operation are unsatisfactory. Packing with gauze is particularly so. It is difficult by this method to secure sufficient pressure in the proper place to control hemorrhage efficiently. By its capillarity the gauze acts as a drain, keeping up a continual oozing, which may even reach alarming proportions. It is continually getting down into the pharynx, causing retching and tempting the patient to remove it. Its removal is painful, interferes with healing and always occasions more or less secondary hemorrhage. The open method, with or without the application of collodion to the surfaces operated on, is dangerous and not to be considered as a routine measure.

The Simpson tampon of compressed absorbent cotton in various sizes is a fairly satisfactory dressing but for the difficulty attendant on its introduction or removal. It bends, swells rapidly on contact with the secretions of the nose, making it difficult to introduce and place properly. It clings to the injured surface most tenaciously, causing severe pain and making its removal in the mass practically impossible. When removed piecemeal shreds of considerable size are left adherent to the wounded surfaces and hidden away in nooks and crannies, where it is almost impossible to distinguish them from the wound surfaces when they are stained with wound secretion. Unless discovered and removed they keep up a constant irritation, prolong the healing process and contribute to the chances of infection.

To overcome these objectionable features I use the following method, which, it seems to me, solves the problem of nasal packing after most operations.

From a piece of sheet paraffin, or dental wax, as it is called, two splints are cut, conforming in shape to the Simpson nasal tampon and about 15 mm. (⅝ in.) longer than the tampon, and a piece is cut from a second tampon to fill in the extra length. The tampon is now placed between the two strips of paraffin, to which it is cemented by means of aristol-collodion. Any thickness desired may be had by varying the thickness of the Simpson tampon, either by splitting them or by using the different thicknesses in which they come. The completed tampon is now pushed into place, a procedure which is facilitated by the smooth waxy surfaces of the splints. Once in position the cotton rapidly absorbs moisture from the adjacent mucous membrane and, swelling, forces the paraffin plates against the septum and the outer wall of the nasal cavity. Under the influence of the body temperature the paraffin becomes pliable and is thus molded into accurate apposition with the wound surfaces, controlling hemorrhage and making an ideal non-irritating, protective dressing. When the time comes for its removal, which should be at the end of 48 hours, the tampon can be removed *en masse* easily and painlessly, there being absolutely no adhesion between the paraffin plates and the wound surfaces. Their greasy smooth surfaces offer no resistance to removal and they slip out without pain, hemorrhage or other inconvenience.

A spur or ridge of the septum may be removed coincident with the removal of a turbinate, without the slightest danger of synechia, if this dressing is used and a single plate of the paraffin replaced after the removal of the tampon, and worn until healing is complete.

In submucous resection of the septum it is an excellent dressing. Using a tampon in each nostril, any degree of firm equable pressure may be obtained and maintained as long as desirable, and they may be changed as often as desired without disturbance of the parts.

By placing the Simpson tampons in a letter press or between heavy weights to prevent their expanding, they may be impregnated with alcoholic solutions of aristol, iodoform or other antiseptics and allowed to dry before being placed between the paraffin plates, which also may be kept in an antiseptic solution, thus making an antiseptic as well as aseptic dressing.

A METHOD FOR THE RAPID DIAGNOSIS OF DIPHTHERIA BY THE GENERAL PRACTITIONER.*

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The necessity for the early diagnosis of diphtheria is often painfully apparent to the general practitioner, as failure in that regard too often results in involvement of the larynx, especially in children, while this, in turn, frequently ends in the early demise of the child. I, therefore, offer this method to the profession, with the hope that it may facilitate the diagnosis of this disease:

It is necessary first to obtain a culture from the throat or nose of the patient by means of a swab of absorbent cotton or the platinum needle. A swab which is very convenient for this purpose may be made as follows: An ordinary test-tube is sterilized in the Bunsen or alcohol flame. A wire is bent with a loop at both ends, and made just long enough to fit the tube. One end of this wire is then wound with wick asbestos in the form of a convenient sized swab, the other end is wound with similar asbestos, so as to fit the top of the tube as a stopper, similar to the cotton stopper of the ordinary culture tube. The whole swab is then sterilized in the flame and placed within the tube, and is then ready for use. This swab

* Read before the Macoupin County (Ill.) Medical Society, Jan. 15, 1907.

tube may be carried in the overcoat pocket and used in any suspected case. Its chief advantage is that it may be used repeatedly, sterilizing it each time in a flame. I am indebted to Dr. Wright of the staff of the Calumet and Hecla Mining Company's Hospital for this method of preparing a universal swab, and wish to pass it on to others for what it is worth.

The next step in the process is to obtain some Loeffler's blood serum tube slants; these can be obtained from any of the reputable pharmaceutical houses and may be kept on hand for a reasonable length of time without contamination. They may be kept at the office or one may be carried in the pocket, as necessity demands.

The swab is rubbed over the suspected area of nasal mucous membrane, or tonsil or pharynx, and a smear made at once on an ordinary cover-glass or glass slide. The serum slant is inoculated by passing the swab gently over its surface, and the swab is then sterilized in a blue flame and replaced in its tube for future use.

The inoculated serum tube must be incubated for 12 hours; this can be easily done in the following manner: The tube is slipped in the inside vest pocket and kept next the body for twelve hours, the physician acting as his own incubator. At the expiration of that length of time if the diphtheria bacillus be present there will appear a yellowish-white glazy growth, with white colonies here and there, showing irregular edges and smooth surfaces. Smears from this culture are examined microscopically, the staining being done with Loeffler's alkaline methylene blue stain. If the characteristic bacilli with their long-beaded threads, clubbed ends and irregular-sized dots are found the clinical diagnosis of diphtheria is corroborated.

McFarland says: "Very few other germs found in the throat will produce so rapid a growth on this culture media." This I have found to be true, perhaps with one exception, and that is some varieties of the streptococcus; these, however, may be differentiated by the characteristic dew-drop appearance of the culture on the serum slant, when it first appears, and the chain-like structure of the coccus under the microscope. While waiting for the growth to develop the smears made directly from the throat may be examined microscopically, and if suspicious bacilli are found it will help to confirm the diagnosis.

The advantages of this method are: the necessity of waiting from 24 to 48 hours or even more is obviated.

The general practitioner becomes expert in identification of the diphtheria bacillus.

The practitioner may also keep a check on his diagnosis by sending specimens to the state laboratory for diagnosis.

IMPROVED FRACTURE APPARATUS.

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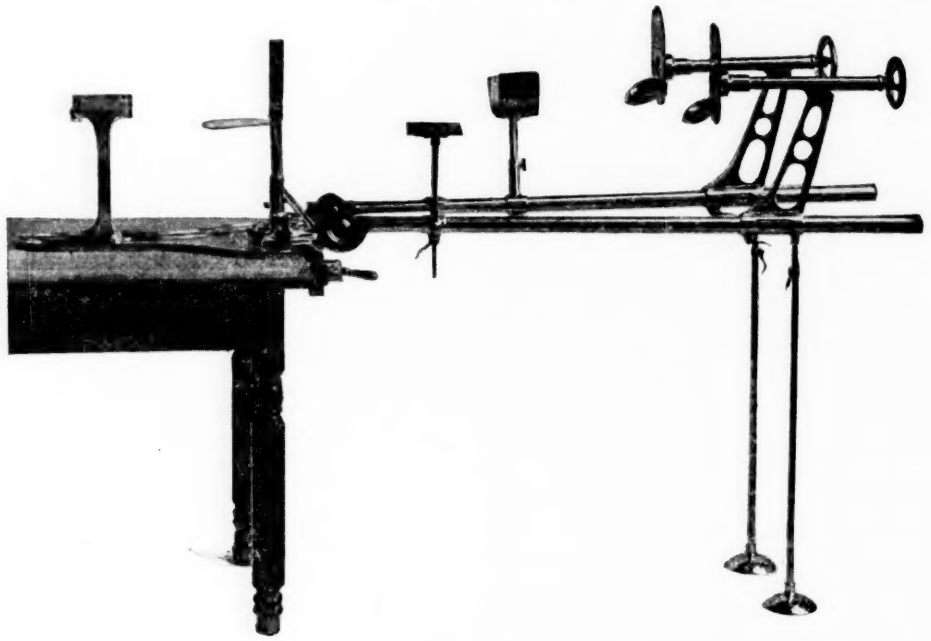
MILWAUKEE, WIS.

The apparatus here shown is the result of combined effort on the part of Dr. Frederick T. Mueller of Chicago and myself, with the assistance of Mr. S. George Hubbell of Milwaukee, a mechanical expert, who carried our ideas into effect. The purpose of the machine is to enable the surgeon to reduce a fracture of any of the long bones of the lower extremity and hold the fractured ends in apposition while a permanent set is made by a plaster cast. It is used also in various orthopedic operations.

To facilitate the reduction of fractures the patient is placed in a horizontal position on the machine, the feet being separately fastened to the foot rests on the ends of



the long rods, the sacrum resting on the horizontal plate supported on the vertical post, which latter comes between the legs and touches the pubic arch. The shoulders of the patient rest on the support at the free end of the main frame, which is attached to the table, while the head rests on a box or on pillows placed on the table.

The two upright supports seen on the horizontal rods are to support on one side the sound knee and on the other the site of fracture so as to prevent backward bowing, the extremities being kept in even planes. In order to facilitate adjustment of fragments and to overcome distortion of proximal fragments such as occur in fractures of the upper third of the femur, the two long rods may be adjusted to any angle the human leg can be placed in. These rods are attached by their proximal ends to the main frame of the apparatus by friction-discs, which permit of universal joint movement.

The extension of the legs is made by screws attached to the hand wheels seen on the foot brackets. These screws pull the body toward the foot rests until the pubic bone impinges firmly against the vertical post in front of the horizontal plate on which the sacrum rests. Ad-

ditional extension can be made on either leg as desired until the bones are accurately adjusted. It will be seen that no movement of the fragments is possible after being once adjusted until the screw pressure is released.

The plate for supporting the site of the fracture may be tilted by means of a hub on the fixture so that in supracondylar fractures of the femur relaxation of the gastrocnemius muscle may be effected and the leg brought to the double inclined plane position by elevating the supporting plate by means of the small hand wheel which turns on the threaded vertical portion. The horizontal rods may be raised or lowered from the horizontal plane and abducted or adducted, or these movements may be combined. The foot brackets slide on the horizontal rods so that the machine is quickly adjusted to fit a large or small person.

These machines are manufactured by The Badger Appliance Company of Milwaukee, Wis.

HOLES IN THE MESENTERY WITH HERNIATION OF THE INTESTINE.

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These anatomic curiosities, due to defect of development or subsequent alteration in structure, seem to attract little attention; nevertheless, they are of scientific interest. Holes in the mesentery are apparently of great infrequency and with few exceptions no references to them are found in the literature nor attempts to explain their origin. In the mesogastrium (the omentum) they are not infrequent. It is probable that the same conditions which cause them in the omentum lead to their formation in the mesentery. They are seldom found in the upper part; the nearer the cecum the more numerous and the larger they become. Traumatism with laceration, the breaking down of caseous glands, and emptying of serous or chylous cysts may give origin to them, but the most frequent situation for their location being proximal to the cecum, suggests defective arterial supply and gradual absorption as the more logical explanation for their existence. Anastomosis of the ileocolic branch of the mesenteric artery, with the intestinal branches, is sometimes so incomplete that it is often impossible to inject this area. These holes in the mesentery, when due to laceration, are jagged and irregular, but when due to gradual absorption of the constituents of the tissue the edges are even, rounded and not cicatricial. Through these foramina herniations of gut may occur, causing strangulation.

CASE 1.—J. D., a railroad hand, aged about 45, was seen at the Bayonne Hospital through the courtesy of Drs. Sexsmith and Abbott.

History.—The man had been ill three days with symptoms of appendicitis; temperature was 102 F., pulse over 100. There was general abdominal tenderness, focusing at the cecum; the abdomen was hard and tympanitic. The man vomited contents of the stomach and upper intestine. The general condition was bad.

Operation.—An incision was made through the sheath of the right rectus. General peritonitis was present as evidenced by seropus and flakes of lymph between the intestinal coils. In the cecal region a hole was discovered in the mesentery at the terminal end of the ileum, close to the cecum, with smooth margins and regular outline about two inches in diameter. Through this, from above, passed a coil of small intestine for a distance of over two inches. It was not adherent to the margins of the hole, but was held in place by the tip of an ascending gangrenous appendix. In other words there was intraperitoneal herniation of a knuckle of gut through the hole, the herniated portion being held in position by agglutination to the tip of the appendix; the appendicitis was subsequent to the former condition.

CASE 2.—E. E., aged 10, entered Christ Hospital, Jersey City, Jan. 5, 1907, and was seen through the courtesy of Dr. Franklyn.

History.—For five days the patient had had obstipation with tympany, but no rise in temperature. There had also been colic and green vomit. The condition was bad. Examination proved negative.

Operation.—The abdomen was opened through the sheath of the right rectus. There was a considerable quantity of intraperitoneal fluid. The coils of small intestine were much injected and roughened, but there was no lymph deposit. Meckel's diverticulum was pear-shaped, with a two-inch pedicle, three-eighths of an inch in diameter, and very firm; there was also a cyst-like enlargement at the periphery one and one-half inches in length. The diverticulum looped over and herniated through a small hole one-quarter of an inch in diameter, in the base of its own mesentery, on a direct line with its origin. The cyst-like expansion protruded on the side distal to the loop and was anchored by its enlargement. Through this loop several inches of small intestine were herniated proximal to the origin of the diverticulum. The hole in the mesentery was stretched by artery forceps, the diverticulum was withdrawn and, including the loop of intestine, liberated.

SOME OBSTETRIC EXPERIENCES IN CHINA.

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There is no way of estimating the mortality from childbirth in China, but it must be very large. Ignorant midwives attend most of the cases. A physician is rarely sent for, and when he comes, so far as I can learn, he is not supposed to examine the patient, but merely feels her pulse and writes a prescription for the particular complication from which she is suffering. A woman in labor is considered unclean, and ordinarily a Chinese doctor would not be willing to pollute himself by coming in contact with the discharges from a labor case. Among the higher classes, especially, the relatives of a puerperal woman will not come into her room until a month after her delivery. She is taken care of by midwives and female servants. The result of such neglect can easily be imagined.

PLACENTA PRÆVIA.

One of the first obstetric cases I saw after coming to China was a case of placenta prævia at about the sixth month. The patient had been having pains for several days, and on examination I found the os dilated to two inches in diameter and the placenta presenting. Miscarriage was apparently inevitable. At that time I had no hospital or room of any kind in which I could put an in-patient. As the woman had come from a distance, I advised her to rent a room near by and let me attend her. As she was suffering a good deal of pain, I gave her a hypodermic injection of morphin, and then she and her husband got on their boat, he promising to come for me as soon as he succeeded in renting a room. I did not see them again for two days, when they both appeared at the dispensary and informed me that the miscarriage had taken place shortly after she got on the boat. The woman said she was feeling all right, and they insisted on going back home. They were loud in their praises of my skill (?), as the morphin had relieved her pain almost immediately, and, as she thought, had brought on labor, which was painless. At the time I saw her there was very little hemorrhage, though, as I recollect, she gave the history of having had severe hemorrhage some time before I saw her. This woman made a good recovery, though after she returned home she had an attack of fever, which they said was malaria.

TRANSVERSE PRESENTATION.

Another one of my earliest cases was a transverse presentation with prolapse of the arm. After a good deal of manipulation I succeeded in pushing up the arm and changing the position to a vertex. Then I applied the ordinary McLane forceps at the superior strait and delivered without any particular difficulty. The child was a large, healthy boy. The woman appeared to have an irregularly shaped, though not contracted pelvis. She gave the history of having borne one child previously, which also presented transversely; the attending midwife had delivered the child in sections, probably beginning by pulling off the arm. The woman has not borne any children since.

ECLAMPSIA.

One morning early I was called to see a patient who had been brought to the door on a boat. She was in a deep stupor and could not be aroused. It was evidently a case of eclampsia. Labor pains had ceased and the os was dilated enough to admit two fingers. The patient's friends and family were extremely anxious for her to be delivered as quickly as possible, even if the child had to be mutilated. That is, they insisted that I act in the interest of the woman, without regard to the child. The patient was a primipara and the child seemed to be large, so I felt that haste was necessary if the woman's life was to be saved. After dilating the cervix as much as I could with my fingers, I reluctantly proceeded to do a craniotomy. As soon as the child was delivered, the people said that they had to go. I urged them to stay and let me do what I could for the woman, who was still in a stupor, but they insisted on leaving, as they had hired out their boat for a trip that day and would lose the money if they did not appear on time. I managed to pour a large dose of magnesium sulphate down the woman's throat at the imminent risk of strangling her, and then they left. Some days afterward they came back and reported that the woman was entirely well, and they seemed very grateful for what I had done.

Some months after this I was called to see another case of eclampsia, this time in a multipara. This woman also was in a deep stupor. Labor had not begun, but as she had a roomy vagina and pelvis, I found no particular difficulty in performing manual dilatation of the os and delivering immediately with forceps. The child was alive and healthy, but, in spite of all I could do, the mother continued in her unconscious condition and finally died.

CRANIOTOMY.

One day I was called to see a case of difficult labor several miles out in the country. As the messenger who came for me said that the child's head was visible, I did not take my craniotomy instruments with me. When I reached the patient I found a case of contracted pelvis with the child's head above the brim. The fetal heart was very slow and barely audible. What they had taken to be the child's head I do not know, unless it was the swollen and discolored external genitals, or possibly a blood clot. I was in a quandary. However, after soaking my penknife in a carbolic solution for a while, I succeeded in perforating the head with it. Then by using my McLane forceps as a cranioclast, I reduced the size of the head enough to accomplish the delivery. The patient made an uneventful recovery, and I have seen her a number of times since.

PODALIC VERSION.

A little over two years ago I was called to see the most difficult obstetric case that it has ever been my lot to attend. The patient lived about 5 miles out in the country. I was called at night and my Chinese assistant and I went in a boat. We found the patient in a straw-thatched hovel with a dirt floor, lying in a dark corner on a pile of straw. It was a transverse presentation, and the child's arm had been broken by the midwife's efforts at delivery. The patient was in an exhausted condition, her lips were parched and dry and her pulse was 120. The doubled-up chest of the child was jammed down into the pelvis and the arm was prolapsed; the uterus was contracted so firmly on the rest of the child's body that it was impossible to push the prolapsed arm or the chest up above the brim. I had no bone forceps with which to cut the ribs and cause the chest to collapse, so the alternatives left to me seemed to be decapitation and podalic version, both of them about as difficult and dangerous under the circumstances as one could well imagine. I have never had any leaning toward decapitation. The thought of a trunkless head inside of a firmly contracted uterus is not, to my mind, a particularly enviable condition to treat. Podalic version, if it were possible, seemed to offer the best chances of a quick delivery, which was the great desideratum, considering the condition of the patient. I decided that the danger of rupturing the uterus or otherwise injuring the soft parts by manipulation was more than overbalanced by the greater danger of leaving the woman undelivered, so I determined to use a good deal of force, if necessary. To get my hand and arm past the child's doubled-up chest as it lay in the pelvis seemed a physical impossibility, and so I thought it was going to be when I first tried it. Gradually, however, I worked my arm up in spite of the great pressure until my fingers came in contact with the child's feet. When I tried to grasp a foot, I found that I could not, as my fingers were numb from the pressure. I tried again and again without the slightest success. As the numbness was increasing, there was nothing to do but to withdraw my arm. After waiting a while, I tried again. About this time my assistant informed me that the patient's pulse had increased to 140, so feeling that I must not lose any time, I made a desperate effort and succeeded in grasping a foot firmly enough to exert a little traction. Then I got a better hold and exerted more traction, and as a result the mass that had seemed hopelessly wedged in the pelvis began to move upward. It was not long before I had a foot out, and of course the rest was easy. I was surprised at the marked effect of moderate traction on the foot in making the impacted chest go back into the uterus, in spite of the fact that the uterus was in a state of tonic contraction. This patient also made an uneventful recovery.

DELIVERY OF MORIBUND PATIENT.

A little more than a year ago I saw a case of twins that illustrates the influence of Chinese superstition on foreign medical practice. One child had been born the day before I was called and was living. The second child, much the larger of the two, was still in the uterus. It was evident from the degree of maceration and the odor that the child had been dead for some time. As the mother was almost moribund, I told them that I did not care to undertake the case. I told them that the patient would probably die during delivery or soon after. They replied that they realized the woman's desperate condition, but that they wanted her delivered, living or dead. Their extreme anxiety to have her delivered was due to a belief of the Chinese that a pregnant woman who dies undelivered is doomed to continue carrying the child in the next world. After receiving their assurance that I would be free from responsibility for the death of the woman, I proceeded to remove the putrid fetus. Labor pains had ceased entirely and the breech was presenting. On account of the large size of the fetal head and the rigidity of the maternal tissues, I had to apply forceps to the after-coming head. The patient died a few hours after delivery.

UTERINE INERTIA.

Chinese women seem to be subject to uterine inertia. It is not surprising that this should be the case in women of the higher classes, who have bound feet and who take practically no exercise, but I have been struck with its frequency even in hard-working women with natural feet. Often after the os is half dilated the pains become feeble and ineffectual and the labor drags on hour after hour, making scarcely any progress. Making these patients walk around or giving them quinin seems to have very little effect. In a great many cases, however, rupturing the membranes early (i. e., when the os is about half dilated) seems to have a remarkable effect in stimulating the pains. I have done this so often lately and with such uniformly good results, that the conviction is constantly being strengthened in my mind that, after the os is dilated to about two inches in diameter, the "bag of waters" rarely serves any useful purpose and often makes the pains ineffectual.

Recently I attended a multipara with marked uterine inertia. The os was dilated to about two inches and she seemed

to be making no progress. The pains were very feeble and seemed to have scarcely any effect on the dilatation. I ruptured the membranes, and the pains increased enough to dilate the os to about three inches, and then there was no further progress. The pelvis was roomy, the child's head was small and there was no rigidity of the cervix, but still the head refused to descend. I applied the forceps and, though the traction used was very slight, the head came down without the least difficulty and delivery was soon accomplished. I think I have never used such a small amount of traction in a forceps delivery.

Though my obstetric practice is not large, there is a steady increase, which shows that the Chinese here are beginning to realize the value of foreign methods in this branch of medicine. In looking over my records I find that in about ten years of hospital work here there have been 14 forceps deliveries, 4 craniotomies, 2 transverse presentations, 1 cephalic version, 1 podalic version and 1 premature labor for hyperemesis gravidarum.

During 1906 I had 12 cases, more than in any previous year. Several were in wealthy, influential families.

China is making rapid strides toward civilization, and Western medical science is destined to be an important factor in the process. A large number of medical books have been translated into Chinese by medical missionaries and more are constantly being translated. There are several medical schools in China, and we hope to see a medical magazine in Chinese established at no very distant date.

LIGATION OF THE BLEEDING VESSEL IN THE HEMORRHAGE FROM DUODENAL ULCER.

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PITTSBURG, PA.

In view of the present diversity of opinion concerning the advisability of direct ligation of the bleeding vessel in ulcer of the stomach and duodenum, the following case is reported:

Patient.—Mrs. F., aged 26, was seen in consultation with Dr. W. N. Humphrey, Oct. 8, 1906.

History.—She had been married eleven years and had had one miscarriage at third month; no children. Her general health was good until three years ago, when pain began in the right side of the chest radiating to the back. It was more or less constant and always greater after eating. Some foods caused more distress than others. There was vomiting at irregular intervals, and she was usually worse before the menstrual periods. The patient never vomited blood until Oct. 2, 1906, when a very severe hemorrhage occurred. This was quickly followed by a second and third attack on the same day. On October 3 another severe hemorrhage occurred and a large quantity of blood was passed from the bowels. No further bleeding from the stomach occurred until October 8, although blood continued to be present in the bowel movements during this interval. In the afternoon of October 8 another hemorrhage occurred. At this time I was called and found the patient's condition to be critical, as denoted by a rapid pulse and extreme pallor. All treatment, medicinal and otherwise, having been administered without any effect on the hemorrhage, operation was advised. Early the following morning, before being removed to the hospital, another hemorrhage occurred, leaving her in such serious condition that the ambulance surgeon feared to convey her to the hospital. The picture presented on admission was one seen in cases of extreme hemorrhage: Pulse weak and rapid, extremities cold, mucous membranes blanched. The continuation of medicinal treatment seemed unwise. For the following twenty-four hours the woman was stimulated and given injections of normal salt solution. At the end of this time her condition was somewhat improved, and in view of the persistently recurring hemorrhages, ligation of the bleeding vessel seemed the only safe treatment.

Operation.—On October 10, under light ether anesthesia administered by Dr. Stuart, an incision was made in the median line. Careful examination of the external surface of the stomach and duodenum failed to reveal the location of the ulcer. The stomach was then opened by an incision through the anterior wall at the pyloric end. An ulcer was found in the duodenum just below the pyloric ring. It was of the mucous variety and was situated so close to the ring that external palpation did not reveal its location. The ulcer was transfixed and ligated with catgut and the peritoneal surface reinforced by mattress sutures. The opening into the stomach was closed and a posterior gastroenterostomy with no loop was performed. It was necessary to administer considerable stimulation throughout the operation, but the patient rallied well and made a good recovery. There has been no further hemorrhage and she is now free from pain and eats everything without distress.

The diagnosis as to the definite location of the ulcer was uncertain. While large quantities of blood coming through the bowel and the peculiar location of pain seemed to point to an ulcer of the duodenum, yet it seemed somewhat doubtful that such large quantities of fresh blood would pass backward so quickly into the stomach. It was evident, however, that it was located near the pylorus. The indications for treatment remained the same in either case.

A CONVENIENT METHOD OF OBTAINING CLUMP-FREE EMULSION FOR OPSONIC WORK.

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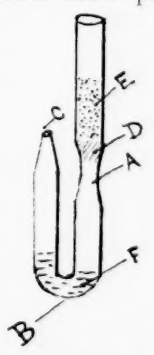
MONROVIA, CAL.

While studying the specificity of opsonins last summer in Professor Wright's laboratory I sought for a method of quickly separating organisms from the liquid in which they are suspended, centrifugating alone requiring from thirty minutes to one hour. The following device was used with splendid success: A constriction (A) is made in a piece of small-caliber glass tubing; the tubing is then bent on itself (B), terminating in an opening (C). Moist filter paper fiber (D) (conveniently made by scraping filter paper with the edge of a knife) is placed against the constriction and packed firmly. Into the long arm is placed the liquid (E) to be filtered and the device is placed in the centrifuge.



Working with staphylococci, I obtained practically bacteria-free filtrates (F) in ten to fifteen minutes from thick suspensions of staphylococci in normal sera. The filtrates showed scarcely any opsonin, and stained specimens practically no organisms. Similar centrifugo-filtration of tubercle bacilli required but eight to ten minutes, since the fiber need not be packed so firmly.

The device, however, has a more practical application. When a bacterial emulsion presents many clumps which resist ordinary mechanical means of division a clump-free filtrate may be obtained by this method suitable for opsonic work in twenty or thirty seconds—only a few turns of the centrifuge. If, however, this first filtrate contains clumps it is easily taken from the device by introducing a capillary pipette and again filtering. I find that repeated filtration through loosely-packed fiber is more certain than a single filtration through tightly-packed fiber, since in the latter case the filtrate-emulsion is likely to be too thin. Two or four filtrations may be accomplished in as many minutes.

AN IMPROVED TRACTION SHOE.

JOHN JOSEPH NUTT, B.L., M.D.
Clinical Instructor in Orthopedic Surgery, Cornell University Medical College; Assistant Surgeon to the New York State Hospital for Crippled and Deformed Children.
NEW YORK CITY.

The successful treatment of Shaffer's foot, invariably, and of flatfoot, frequently, depends on the elongation of the gastrocnemius muscle. Compensation in the former condition, by means of a higher heeled shoe, and splinting the deformed foot with steel arches, in the latter condition, are measures which generally give relief, but of themselves are not curative.

An active foot, with limitation of dorsal flexion, must suffer from the alteration of its mechanics. The changed disposition of the superincumbent weight and the abnormal points of resistance due to the restricted movements of the lever-arms, must, inevitably, cause such disturbances as result from pressure, i. e., corns, bunions, callosities, "ingrowing toe-nails" and Morton's toe and an alteration, or a tendency to an alteration, in the relations of the tarsal bones. Whether the foot becomes what is known as flat, or presents a higher arch than formerly, depends on the amount of limitation of dorsal flexion and on the strength of the plantar tissues which serve to maintain the normal medio-tarsal joint.

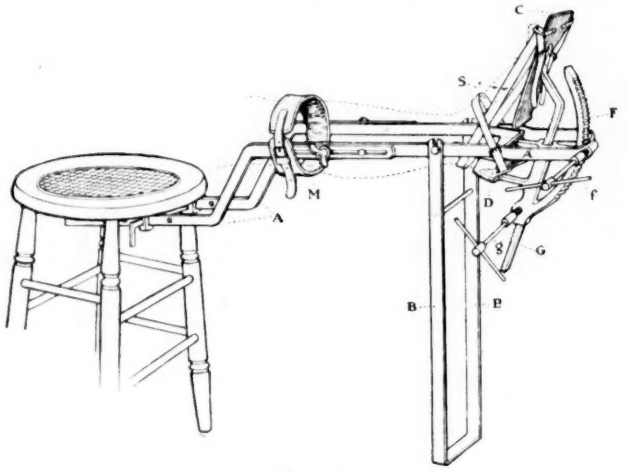


Figure 1.

Every examination of an extremity should include an examination of all its joints. Examination of the ankle joint will often determine the cause of a thigh, leg or knee pain which, erroneously, has been considered rheumatic, neuralgic or neuritic. A painful flatfoot having a shortened gastrocnemius may often be relieved by restoring normal movement to the ankle joint, even without any further attempt at restoring the arch. When a neglected Shaffer's foot has resulted in a flatfoot an artificial arch alone can not be expected to cure. The prolonged use of steel arches is seldom necessary and must be productive of atrophy of the small muscles, ligaments and fasciæ of the foot.

The apparatus in general use for stretching the posttibial muscles is the traction shoe devised by Dr. Shaffer and presented to the profession about twenty-five years ago. With this machine any desired force can be applied. From a therapeutic standpoint it is unqualifiedly successful. The force is the resultant of two forces, one applied in an antero-posterior direction through a strap passing behind the heel and called the heel-strap, and the other a force applied through a strap passing over the neck of the astragalus and called the astragalar strap. This resultant pulls the calcaneum downward and forward in an arch whose radii are from a center passing through the astragalus just below the external malleolus; the traverse axis of the ankle joint. In very resistant cases, however, the force exerted by the astragalar strap is such as to cause considerable discomfort

In the apparatus presented herewith the astragalar strap is not brought into use until the gastrocnemius is well stretched, and then a momentary hyperextension is obtained by the use of an antero-posterior ratchet exactly similar to the one in Shaffer's shoe.

The machine consists of two lateral bars, a stand and a foot-piece. The lateral bars A, A, are joined at their distal ends in a U shape piece. Their proximal ends are bent so as to pass beneath the chair, where they are secured by a draw-pin which passes through a socket

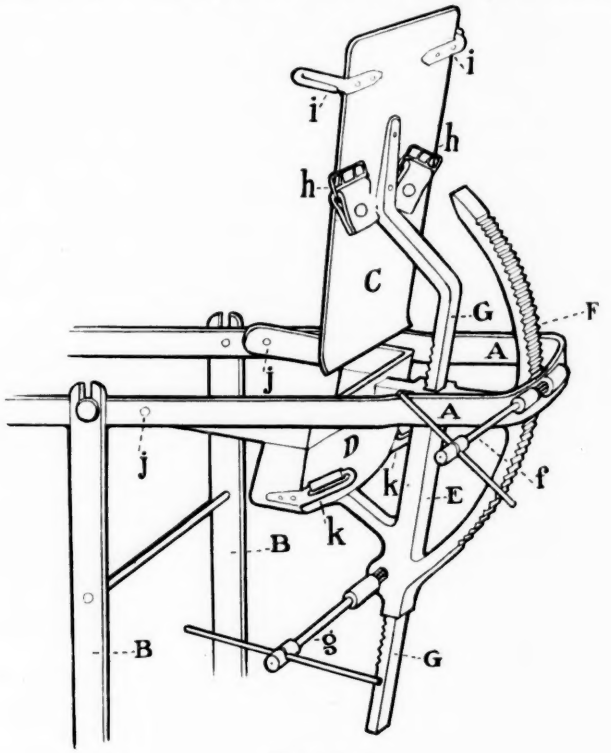


Figure 2.

screwed to the bottom of the chair-seat. The continuity of these lateral bars is interrupted just below the calf-band M, and the ends, overlapping, are held by thumb screws. Thus these bars may be shortened or lengthened as desired. The stand B, B supports the machine. It is detachable. The foot-piece consists of a foot-plate C and a heel-cup D. The foot-plate is joined to the heel-cup through the ratchet bar G, passing through the sheath E, which is secured to the bottom of the heel-cup. The entire foot-piece is riveted to the lateral bars at j, j, and by means of the ratchet F can be moved about the axis passing through j, j. The arc of the ratchet F is constructed on the radius jF.

To the bottom of the foot-plate are riveted two buckles h, h, which secure the heel-strap. This strap passes behind the heel, forward on both sides of the foot, over the hangers i, i, projecting upward from the front of the foot-plate and backward to the buckles. On each side of the heel-cup are pulleys, k, k, through which the astragalar S is roven. The strap crosses over the ankle opposite the head of the astragalus, from one pulley to the other, and is doubled back and one end passed through the buckle sewed to the other end.

The method of application is as follows: The patient is seated in the chair, the heel placed in the heel-cup D, and the lateral bars A, A are adjusted by means of the thumb screws to the exact length of the limb with the leg fully extended. It is necessary that the axis of the ankle joint should pass through the axis of rotation of the foot-piece j, j. The heel-strap assists greatly in obtaining the alignment of these two axes. While fitting the apparatus the foot-piece should be plantar flexed to an angle affording an easy position for the foot. The last thing to be done is to fasten the strap of the calf band. This prevents the patient flexing the knee as the strain comes on the gastrocnemius.

Traction may now be started. Using the key f, the ratchet F is made to pass forward and around the axis j, j. Everything on that foot-piece will move through arcs whose radii extend from the common center. The foot is thus moved, forcibly, about the ankle joint. When the tautness of the tendo-Achilles, as ascertained by palpation and the sensation of the patient, warns one that full flexion is obtained, the astragalar strap is applied and a momentary hyperextension produced by means of the antero-posterior ratchet G. Those familiar with Shaffer's traction shoe will recognize in this part of the treatment the copy of that shoe. Furthermore, it should be mentioned that Dr. Shaffer, by means of a worm and screw, also altered the angle of flexion and extension of the foot-piece.

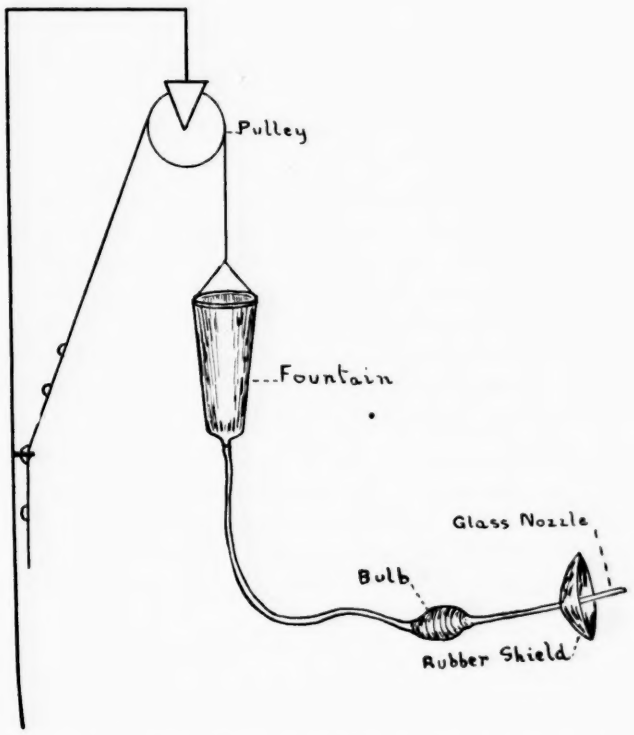
A NEW PRINCIPLE IN IRRIGATION OF THE URETHRA WITH INSTRUMENT.

J. H. BACON, B.S., M.D.
PEORIA, ILL.

I have been using a new principle in the treatment of gonorrhea, and the results seem to me to be good. The difference between my method of treating gonorrhea and that of those who use irrigations is not medicinal but mechanical. Instead of using only the force of pressure from gravity for irrigation of the urethra, I have added a bulb to the irrigation tube, and by intermittent pressing obtain an intermittent or rather a rhythmic pressure. The value of this kind of pressure over simple pressure was brought to my mind by seeing the blood vessels pulsate in the thigh of one of my patients while I was irrigating and remembering that the blood will not continue to circulate if the pressure is steady. It is only when the pressure is rhythmic that the blood will pass through the capillaries. Now, if we use Nature's method we must use rhythmic pressure in irrigating if we wish to have the fluid penetrate deeply into the lining membrane of the cavity irrigated. If the urethra were a flat surface the treatment would be simple and cleanliness could easily be maintained, but being an elastic tube it is more difficult to give it the very essential cleaning.

I use a quart glass fountain that can be raised or lowered at will. At the bottom it is connected with six feet of rubber tubing. Into this tubing about one foot and a half from the distal end is fitted a valveless rubber bulb the size of an atomizer bulb. A long, blunt glass nozzle is attached to the distal end of the tube, over which a half of a hollow rubber ball is placed in such a manner as to protect the hands of the operator from escaping fluid returning from the urethra. The bulb is used without valves so that the pressure used can not rise much above the fountain head without being regurgitated into the fountain. This protects the bladder from being invaded if the fountain is not raised more than two to two and one-half feet above the level of the urethra. All the apparatus can be readily and cheaply set up in the office, and yet be efficient.

When a patient presents himself in the early stage with a thick discharge showing the intracellular diplococci he is instructed to keep the bowels loose, drink freely of water, abstain from alcohol, coffee and spiced food, avoid excesses of all kinds and get abundance of sleep. Internally he is put on 15 grains of hexamethylenamine and 3 minims of oil of sandalwood three times a day. Sometimes I have given Lafayette's mixture in conjunction, with hexamethylenamine with good results. The urethra is irrigated four times a day with warm normal salt solution for the first week. The irrigating fluid is changed to 1:5000 potassium permanganate the second week and 1:1000 silver nitrate the third week, and this continued till cure is established. I hold the case cured if after one weeks' intermission no gonococci are found.



The irrigating fluid is heated to about 125 degrees Fahrenheit, the fountain maintained at two feet above the level of the urethra and the meatus and first half inch of canal washed out after the patient has urinated. The nozzle is then more firmly pressed into the urethra and the bulb pressed quickly and softly at the rate of about 80 to 90 to the minute. The urethra is seen to pulsate with each compression of the bulb at the same time there is some escape of fluid around the nozzle. The fluid penetrates deeply into the follicles and glands of the mucosa, the nidus of the infection and one can often see little yellowish white specks of pus that are jarred loose and swept out in this pulsating stream of fluid which would have remained in place for days and maintained the infection. In my experience the duration of an infection can be shortened from one to two weeks. This same principle of rhythmic pressure can be used with advantage, I believe, in abscess cavities, the rectum and colon, the pericardium and joints.

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SATURDAY, APRIL 13, 1907.

THE RELATION OF CHLORIDS TO EDEMA.

Although several writers had previously suggested the possibility of edema being due, at least in certain conditions, to the presence of abnormal quantities of sodium chlorid in the tissues, yet general attention was first called to this possibility by the observations and writings of H. Strauss in Germany and of Widal in France in 1902 and 1903. These clinicians observed a striking correlation between the elimination of chlorids and the development of dropsy in certain cases of nephritis, and brought forward evidence to support the hypothesis that in nephritis the ability of the kidney to excrete sodium chlorid is decreased, and that the retention of this salt in the body causes a corresponding retention of water to dilute the salt to that degree of concentration which is compatible with the normal osmotic pressure of the blood and tissue fluids. Many clinicians adopted the suggestions of Strauss and Widal as to the treatment of edema by reduction of the chlorids in the food, and soon the literature of all countries was filled with reports on this subject, describing results and giving conclusions greatly at variance with each other. The first excitement having passed, it is now safe to analyze the various reports that thus far have been submitted, and to attempt to draw conclusions with some hope that they may be reasonably correct.[1]

In the first place, the reports of many competent observers leave us no choice but to conclude that in nephritis, particularly of the parenchymatous type, retention of chlorids often occurs; yet in some typical cases with edema it may not be possible to demonstrate such retention. Also, patients may show a distinct chlorid retention for some time, and then, without evident reason, the retention may cease. Furthermore, in some cases of interstitial nephritis retention may be as marked as in the parenchymatous forms, and this retention is not always associated with edema. In certain cases of nephritis, the edema will be found to vary directly with the degree of chlorid retention, as in the striking instance reported by Widal and Javal, in which it was possible to cause the edema to appear and disappear almost at will by varying the amount of the chlorids in the diet. In other cases, however, even the most careful reduction of the chlorid intake will not appreciably modify the edema, while in perhaps the largest number of cases the amount of edema may be reduced by this means, but not always strikingly or constantly. In other words, the weight of evidence indicates that retention of chlorids frequently is an important feature in the edema of nephritis, but it is not always possible to demonstrate its relation to the edema. Apparently the power of the kidneys to eliminate chlorids varies from time to time, just as the excretion of albumin and the presence of casts may vary. Probably one important reason for our inability to demonstrate a clear relation between chlorid excretion and edema lies in the great power of the body to retain fluid without the development of edema; for example, in one case of nephritis it was observed that feeding salt led to a marked retention of water, but edema did not begin to appear until the patient's weight showed that twelve pounds of water had been accumulated in the body. This power of retaining water without manifestation of edema makes it impossible to establish a close parallelism between the chlorid excretion and the edema, especially when the cases can not be studied very accurately for long periods of time.

Some observers have thought that the primary trouble in nephritic edema is the retention of water, to which the retention of salt is secondary; but the weight of evidence here seems to be that the chlorid retention is primary and the water retention is secondary. The retention of the chlorids seems to depend entirely on the inability of the kidneys to excrete them. Apparently the retained chlorids are held in the tissues throughout the body, for many analyses have shown a retention of chlorids in the tissues—the so-called histo-retention. The amount of chlorids in the blood is not, and can not be, greatly increased, for water must always accumulate to keep the osmotic concentration of the blood not far from normal. Why and how the chlorids accumulate in the tissues in excessive amounts is one of the unsolved problems.

There seems to be no tendency on the part of those who question the general importance of chlorid retention in the etiology of edema to deny the facts brought forward by Widal and others, which show that in at least some cases this retention is the cause of the accompanying edema. The chief question is: How often does edema depend on chlorid retention, and how often is this factor absent or of minor importance as compared with the other possible causes of edema that may be present in nephritic patients? The answer to this question can not possibly be given on the strength of the information afforded by the discordant reports that are to be found in the literature, but it seems safe to say that chlorid retention is an important factor in a very considerable proportion of nephritic edemas. Chlorid retention has also been observed in some cases of dropsy in heart disease, and with some edemas occurring in patients with acute inflammatory disorders, but here it is

1. A full bibliography of this subject will be found in the résumé by Martin Kaufmann, Centrbl. f. d. gesamte Physiol. u. Pathol. des Stoffwechsels, 1906, vii, 497.

not so well established that the observed chlorid retention is more than can be explained as due to the retention of the fluid in the edematous parts.

In any case, however, the treatment of renal dropsy by "dechloridization therapy" seems to be warranted on several grounds. In the first place, of course, comes the indication that in many cases edema is relieved by this means; the amount of chlorids excreted on a chlorid-poor diet being much in excess of the amount taken in, such a diet soon leads to removal of the retained chlorids and with them the retained water. Secondly, there is considerable evidence that chlorids may act injuriously on the diseased kidneys; indeed, excessive quantities of sodium chlorid may cause albuminuria even in healthy individuals, which observation suggests the possibility that the use of oversalted foods may be an important factor in the production of nephritis. It seems to have been commonly found that nephritic patients kept on a chlorid-poor diet show a decreased amount of albumin in the urine, while administration of chlorids causes it to increase. Furthermore, there is abundant evidence that there is no danger in reducing the intake of chlorids to as low a figure as can be done by a carefully selected diet. To reduce the chlorids to such a reasonable minimum, say from 2 to 3 grams a day, no very difficult procedures are necessary, for in eggs, unseasoned meats and unsalted butter we have foods that are nearly salt-free, while the salt content of milk is very low. Bread without salt, fresh water fish, potatoes, rice, fresh vegetables, fruits and chocolate offer a considerable variety of salt-poor foods that make the regulations of a dechloridization diet not intolerable to the patient. It may be added that Widal insists on repeated weighing of the patient, in order to keep track of the degree to which the water is being removed during the treatment.

THE MEDICAL STAFF AND THE HOSPITAL.

The importance of hospitals to the community is now so universally acknowledged that it needs no comment; the organization of hospitals, on the other hand, and the proper relationship which should exist between the medical staff, the administrative officers and the public is a matter which has been treated in this country in far too haphazard a manner. Every hospital trustee, every superintendent and every member of a hospital staff should read the admirable discussion of hospital organization which has recently appeared from the pen of Dr. Goldwater[1] of Mount Sinai Hospital, New York City.

Goldwater's article discusses seriatim, in a clear and forcible manner, the medical staff in relation to the needs of the patient, in relation to medical education, in relation to hospital economy, and in relation to the rights of its members. It is not the place here to cover the entire ground passed over in this article; let it suffice to call attention to some of the salient points, particularly those which refer to details of administration differing from those currently in use in this country. The stress which is laid on the importance of having the admission of patients under the control of mature medical men of good judgment, rather than under inexperienced junior house officers, strikes us as well worthy of attention. We would not like to say how much of the popular prejudice against many hospitals is due to tactless handling of applicants for admission, particularly of rejected applicants. There is little doubt that an unfavorable first impression is often prejudicial to the hospital's interests, and too often the entering patient is subjected to the attentions of attendants who seem to have the unhappy knack of acquiring the flippant callousness and disregard for other people's feelings which are often associated with ticket sellers and second-class hotel clerks. Regarding the care of the patient after admission, Dr. Goldwater emphasizes several points, none more worthy of emphasis than the necessity of visits at regular stated intervals by the attending staff. The quotation from Osler to the effect that the physicians should not only make their visits at stated hours, but should also stay stated hours, is one which could be well heeded by many hospital visiting physicians.

The suggestions regarding the house staff show that, from Dr. Goldwater's point of view, most American hospitals are wofully undermanned in this particular. We fully agree with the writer in this, as we do in his view that each interne should have both a medical and a surgical service to obtain proper breadth of view. The rule that no interne should be promoted to a higher grade who has not shown fitness in a lower one is on the books of far too few of our hospitals.

Two points of especial value are those relating to the family physician, and to the patient during the period of convalescence. Dr. Goldwater suggests that the family physician of a ward patient should have every encouragement to visit his patient in the hospital, not to advise the regular staff, but for the effect on the welfare of the patient. We thoroughly agree with this, and hope that the narrow spirit which has heretofore prevented it in many hospitals will soon disappear. The suggestion that the patient's future be discussed during convalescence, and that the hospital should keep in touch with various charitable institutions which may harbor and protect the patient from the necessity of too early work, is of great value and is too often not considered in routine hospital work.

The discussion of the relation of the hospital to medical education is brief. The keynote of the remarks on this subject lies in the statement that the reason why teaching hospitals are at present so expensive is that only a few hospitals realize their responsibility in this direction. If all hospitals regarded teaching as a necessary and legitimate part of their functions, the number of students assigned to each institution would be so

1. Am. Jour. Med. Sci., April, 1907.

small that practically no extra expense would be incurred. This is certainly the case so far as the large cities are concerned, for hundreds of charity beds in cities like New York and Chicago are never adequately used for teaching purposes. Dr. Goldwater's paper also contains many pertinent remarks concerning the private ward system, the necessity of presenting the economic side of hospital affairs to the medical staff, and the representation of the medical staff in the affairs of the hospital.

THE RELATIVE VALUE OF CULICIDES.

Disinfection for the prevention of yellow fever and malaria having practically resolved itself into mosquito destruction, the scientific study of culicides has assumed much interest and importance. Investigations in this direction are being made by the United States Public Health and Marine-Hospital Service.

Passed Assistant-Surgeon Francis of that Service some time ago reported that the fumes of pyrofume, a liquid derived by fractional distillation from pine wood, are deadly to *Stegomyia fasciata* and *Culex pungens*.[1] Mosquitoes placed in cages on the floor of a room containing the fumes from 265 cubic centimeters of this liquid per 1,000 cubic feet of air space were found dead after one hour. While in this proportion pyrofume is not injurious to metals, fabrics, paint and colors, it has been found that in greater amounts it softens varnish and leaves a deposit on surfaces. Its inflammable nature will also render it objectionable as a culicide until a generator is devised that will evolve the gas without danger.

Francis has more recently reported a series of experiments on the culicidal properties of camphor-phenol and of sulphur.[2] The camphor-phenol was made as follows: The phenol crystals were liquefied by placing the bottles in boiling water; the liquid was then poured into a pan and weighed, and to the hot liquid was added an equal weight of gum camphor, which became dissolved after standing a few hours.

In these experiments great care was taken artificially to protect the mosquitoes in such a way as to simulate the conditions which ordinarily aid the mosquito in escaping the effects of harmful gases. As a result of forty-two experiments on 10,000 mosquitoes he concludes that the fumes of camphor-phenol possess no powers of penetration, that they diffuse poorly, and that they are diminished in efficiency by low temperatures. Mosquitoes show a tendency to recover from the effects of this agent, and varnish is softened when the fumes are strong—an evident disadvantage in the treatment of furnished houses and cabins aboard ships.

Twenty-four experiments with sulphur confirmed the value of this agent so long used in quarantine practice. Small quantities of sulphur proved effective in tests demanding all the necessity for penetration and diffusion likely to be found in practical fumigation. Unfortunately, the fumes of sulphur are in a measure destructive, otherwise it would meet all the requirements of a gaseous culicide. The well-known poisonous effects of hydrocyanic acid fumes are sufficient to discourage their use in actual practice, and in view of these studies it appears that we must, for the present at least, continue to rely on sulphur as the most efficient insecticide.

1. Public Health Reports, xxi, No. 26.
2. Public Health Reports, xxii, No. 14.

MAJOR KEAN AND THE SANITARY TRIUMPH IN CUBA.

One of the incidents connected with the relations of this country to Cuba, of which Americans can be justly proud, is the improved hygienic conditions that resulted when the United States assumed control after the Spanish-American war. The Army of Occupation found very insanitary conditions. The administration and management of almshouses, asylums, orphanages and hospitals of all sorts and sizes had fallen into a chaotic condition throughout the island. Some of the institutions had means but only a few inmates; others were almost without money to keep the unfortunate inmates from actual starvation and yet were crowded with patients. There was a lack of system everywhere.

General Wood cast about for men to bring order out of chaos; the conditions demanded men above the average, who understood the needs of such institutions, and with a faculty for organization. Major J. R. Kean, surgeon, U. S. Army, was one of those selected. His work in putting the organization of the institutions of Cuba, especially the hospitals, on a sound and scientific basis was of great value and was mentioned in flattering terms both by the Military Governor and the Secretary of War. The result was a brilliant success; a symmetrical and well-organized system. While this work of Dr. Kean was appreciated at the time by those who were in a position to know what was going on, it attracted very little public attention.

At that time the general hygienic conditions also were in a deplorable state; Havana was one of the most filthy and most unhealthy cities of the world. When it was turned over to the Republic of Cuba it had become one of the cleanest and healthiest, considering the latitude. Similar work went on under American officers all over the island. One of the men to whom special credit was due for the improved conditions was Major Kean, who, as chief surgeon under General Fitzhugh Lee, had charge of some of the most important functions connected with the cleaning up of Cuba.

When the American Army of Pacification was sent to Cuba last October it was found that conditions had deteriorated under the independent Cuban régime; yellow fever was prevailing in the island, a dozen cases being in Havana alone. Thus our troops were endangered by a disease which, while not regarded seriously by the Cubans, might result most disastrously to the

soldiers. The provisional government being essentially military in character, it fell to the Medical Department of the Army to supply an officer to take charge of the sanitary affairs. The Secretary of War selected Major Kean, and to him and to his assistants must be given credit for the splendid results which followed. Our news columns have shown week by week a gradual decrease in the number of yellow fever cases reported, Havana having not a single case since January 1, and the island itself being free from the disease. Since January 10 there has not been a case of yellow fever among the enlisted men, and only one officer contracted the disease. This task also required intelligent, faithful and persistent effort, and Major Kean and his assistants furnished it. Working under the difficulties of a strange language and an ignorant population intensely conservative in its habits of life, they have accomplished a task that is a credit to the country and to preventive medicine.

It is a pity that such work should go unrecognized by the general public, for it is certainly as praiseworthy as any incident connected with our relations with Cuba. Probably if what might have resulted were a known rather than an unknown quantity; if it were known that certain thousands of soldiers would have been disabled by sickness, and that a definite number would have died had these essentials of preventive medicine not been carried out, the public would show its appreciation and would acknowledge its debt for such work to the men who did it and to preventive medicine in general.

THE BUSINESS SIDE OF MEDICINE IN CANADA.

The failure on the part of the medical profession to take due thought of the practical and material side of its work has often been noted. A Canadian writer[1] recently made the statement, based on the experience of a medical friend, that through indifference and want of cooperation many physicians in the larger cities are living "very near the edge of want and ordinary comfort." That this is relatively true in the United States will be doubted by no one who is well acquainted with the personnel of the profession in the large centers of population, and apparently the same conditions obtain among our northern neighbors. The conclusion follows that we are negligent in our duty to our families, not only so far as present necessities are concerned, but also for the future. This is all the more apparent when we consider the universal tendency toward organization and the confederation of common interests now going on in all lines of industrial and professional life. These conditions in the medical profession are largely the result of indifference and, as the writer says, we have, through indifference, "the establishment of osteopathy, chiropractic, etc. Through indifference we hang on the walls of our offices dazzling chromos of 'patent-medicine' companies. Through indifference we take journals—called medical—whose almanac character is easily noticed. Through indifference, Eddyism and other delusions interfering with medical practice are allowed. Too much study do we give to phagocytosis and opsonins, tubercle bacilli and the *Stegomyia fasciata* and too little to materia medica." And it might be added, too little study do we give to those problems of medical economics on which the future success of the profession depends. It is evident that the same practical problems are confronting our professional brethren in Canada that we have before us here. It is also evident that many physicians are beginning to ask the reason for existing conditions and are making efforts to determine the best means of remedying them. Such signs of the times are encouraging and lead to the hope that the renaissance in medicine, which so far has been confined to its scientific achievements, may also extend to the economic conditions that are at present presenting such perplexing problems.

1. Sprague (J. S.): Medical Thoughts, Facts, Fads and Fancies, Canada Lancet, February, 1907.

STEGOMYIA CALOPUS, THE YELLOW FEVER MOSQUITO.

We are informed that *"Stegomyia calopus"* has been adopted by the Public Health and Marine-Hospital Service and by the Bureau of Entomology, Department of Agriculture, as the official name of the yellow fever mosquito. In the matter of nomenclature this insect has undergone many vicissitudes. Among the names by which it has been known, *Culex fasciatus*, *Culex calopus* and *Stegomyia fasciata* are the most familiar. The mosquito since recognized as responsible for the spread of yellow fever was originally classified as a culex and received over a century ago the title *Culex fasciatus*, a name previously bestowed on an insect not identical with the one in question. The term *Culex calopus* was proposed somewhat later, and with the recent transference of this mosquito to the genus *Stegomyia* the name *Stegomyia calopus* resulted.

Medical News

DISTRICT OF COLUMBIA.

Graduation Exercises.—The graduation exercises of the United States Naval Medical School were held in Washington, March 30, when diplomas were given to a class of 28 by Assistant Secretary of the Navy Newberry. The principal address was made by Dr. J. Chalmers Da Costa, Philadelphia, and addresses were also made by Surgeon-General Presley M. Rixey and Medical Director John C. Wise, U. S. Navy, president of the faculty of the school.

Illness of Major Carroll.—Major James Carroll of the Medical Department of the Army, who was promoted from the grade of first lieutenant to that of major by special act of Congress in the last hours of the recent session, as a reward for his distinguished services as a member of the yellow fever commission in Cuba, has been quite ill at his residence in Washington for the last two months. Major Carroll is suffering from a continued fever of an obscure character, and while he has not at any time been in a dangerous condition, his continued illness has caused more or less uneasiness to his friends. At the present time he is improving and it is hoped that he will soon be able to resume his duties.

ILLINOIS.

Personal.—Dr. Max F. Clausius, Palatine, has removed to Norwood Park.——Dr. Nelson K. McCormick, Normal, has been appointed medical director of Brokaw Hospital, Bloomington.——Dr. Fred Rose, Columbia, was seriously injured by the accidental discharge of a shotgun while hunting recently and was taken to Henrietta Hospital, East St. Louis.

Railway Surgeons Meet.—What will be known as the T., P. & W. Railway Surgeons' Association was organized at Peoria, April 1. The organization expects to be affiliated with the American Association of Railway Surgeons. The visiting surgeons were the guests of Dr. Elmer M. Eckard, surgeon-in-chief of the Toledo, Peoria & Western Railroad.

Chicago.

Gift to Charity.—The Chicago Women's Aid Society at its recent meeting donated $1,000 to the Michael Reese Hospital for use in the children's ward.

Interne Examination.—As a result of the examination of the 96 students at the Cook County Hospital recently, 44 students passed the required grade. Fifteen of the successful applicants will be appointed internes in June.

Deaths of the Week.—For the week ended April 6, 686 deaths were reported, or 58 less than for the preceding week, and 26 less than for the corresponding week of last year. This is equivalent to an annual death rate per 1,000 of 16.97.

Increase in Deaths.—The greatest increase in death causes for the first quarter of 1907, as compared with the corresponding period of last year, was from pneumonia, with a total of 1,860 deaths, or 552 more than in 1906; scarlet fever, with 220 more; tuberculosis, with 120 more, and heart diseases, with 156 more.

Mortality of the Quarter.—During the three months ended March 31, 9,104 deaths were reported, equivalent to an annual death rate of 17.52 per 1,000, an increase of 22.2 per cent. over the death rate for 1906 for the same period, which was 14.34 per 1,000. Among the principal death causes were pneumonia, 1,860; consumption, 1,014; heart disease, 690; Bright's disease, 582, and violence, including suicide, 545.

Pure Food Show.—It is announced that the first World's Pure Food Show will be opened in the Chicago Coliseum November 19 and will continue for one week. The test committee for the exhibit will consist of Dr. Harvey W. Wiley, Washington, D. C.; Drs. John H. Long, Ralph W. Webster, Archibald L. Hoyne and Joseph F. Biehn, of Chicago; Prof. Julius Stieglitz of the University of Chicago, and Dr. James A. Egan, secretary of the State Board of Health.

March Mortality.—During March 3,065 deaths were reported, or 602 more than for the corresponding period of last year. Pneumonia caused 657 deaths; consumption, 366; heart disease, 241; Bright's disease, 188; violence, including suicide, 177. Deaths from scarlet fever diminished, as compared with last month, from 142 to 87; those from diphtheria from 51 to 32; those from typhoid fever from 33 to 21; those from influenza from 36 to 28, and those from measles from 32 to 18.

MARYLAND.

Hospital Report.—The report of the Washington County Hospital, Hagerstown, for its first year, showed that the receipts were $16,245, and the disbursements $12,542. There were 106 patients admitted, of whom 75 were surgical and 31 medical cases. There were 72 operations performed, and 17 deaths occurred during the year, equivalent to an annual death rate of 16.03 per 1,000.

Baltimore.

Mosquito Question.—The city council ordinance for the prevention of breeding of mosquitoes will become operative May 1. The carrying out of the ordinance is in the hands of the health department and $10,000 has been placed at its disposal.

Tuberculosis.—The University of Maryland Nurses' Alumni Association gave an entertainment April 5 for the support of tuberculosis nursing among the poor. A committee has been appointed to study the tuberculosis situation in the state and to supervise the expenditure of the $10,000 recently raised for this purpose.

Illegal Practitioners.—On the testimony of the State Board of Medical Examiners the grand jury is said to have found presentments on the charge of practicing medicine without a license against James E. Creevy, R. Crowley, Robert H. Darrah, D. Romeo and Pasquale Romeo. It is said that the law is constantly being violated by medical students and druggists.

Personal.—Dr. J. M. T. Finney spoke at the last of the men's meetings, held at Belair, Harford County, March 31. ——Dr. Stephen H. Watts of Johns Hopkins University has been elected professor of general surgery in the University of Virginia and director of the University Hospital.——Dr. L. Ernest Neale was operated on for appendicitis at St. Joseph's Hospital, April 5.——Dr. Lewis M. Allen was elected vice-president, and Dr. Gordon Wilson, a member of the executive committee, at a recent meeting of the Society of Virginia University Alumni in Maryland.——Dr. William H. Welch lectured on tuberculosis and its problems at the Johns Hopkins Medical School, April 4.——Dr. Frank Bressler sailed for Jamaica, April 3.——Dr. Harry W. Plaggemeyer has been appointed interne at King's County Hospital, Brooklyn, N. Y.

MISSISSIPPI.

Communicable Diseases.—The secretary of the State Board of Health reports the state to be in an exceptionally healthy condition. The smallpox contagion has abated in many communities, where it was reported during the winter. The disease is still present in mild type in a few localities in the delta.

Hospital Staff.—The following physicians have volunteered to give their services to the King's Daughters Hospital, Gulfport: Emergency surgeons, Drs. Hunt and Robert W. Shipp; female medical ward, Drs. Henry S. Capps, A. L. Morris and Barnes; male medical ward, Drs. Crawley, Heard H. West and W. T. Hutchins; female surgical ward, Drs. Charles LeBaron, Charles A. Sheeley and Mathis, and male surgical ward, Drs. Robert A. Anderson and Edward C. Parker.

Commencement.—The first annual commencement exercises of the Mississippi Medical College, Meridian, were held March 30, when a class of 22 received diplomas. Dr. William W. Hamilton, president of the faculty, presided; Dean Nathan L. Clark gave a short historical review of the institution; Mr. Edwin McMorries, president of the board of trustees, awarded the diplomas, and Dr. W. T. Lowry, president of the Clinton (Miss.) College, delivered the annual address.

Society Meeting.—At the annual meeting of the Attala County Medical Society, held in Kosciusko, March 18, the following officers were elected: President, Dr. Edward C. Coleman Kosciusko; vice-president, Dr. Charles F. Carnes, Kosciusko; secretary-treasurer, Dr. John H. Portwood, Kosciusko, and censor, Dr. Thomas F. Turner, Smyrna. The question of fees for life insurance examination was discussed, but final action was deferred until after the meeting of the state association.

MISSOURI.

Emergency Hospital.—An emergency hospital in the basement of the city hall of Kansas City was opened to receive patients March 30. The hospital equipment consists of two wards, one with eight cots for men, and one with four cots for women, and an emergency operating room.

Pasteur Institute in St. Louis.—A Pasteur institute, for the free treatment of hydrophobia, has been established at the city bacteriologist's office in the City Hospital. Dr. Downey L. Harris is in charge of the institute, for the use of which five rooms have been assigned.

Medical Branch of University Offered to Kansas City.—The curators of the Missouri State University met the mayor of Kansas City and a special council committee, to discuss the establishment in Kansas City of a medical branch of the university, and proposed that the medical administration of the municipal hospitals of the city should be given to the medical department of the university, which would take off the hands of the city the burden of maintenance of hospitals, so far as drugs, surgical supplies, doctors, nurses and attendants are concerned.

Personal.—Dr. David T. Bailey, Trenton, has been appointed physician of Grundy County.——Dr. Francis R. Anthony, Maryville, has succeeded Dr. Kearan C. Cummins, Maryville, as physician of Nodaway County.——Dr. Claude C. Crowley, Richmond, county physician, has been elected secretary of the Ray County board of health.——Dr. Julius H. Weinsburg, St. Louis, was shot and seriously wounded by his son, March 18.——Dr. Hugo M. von Starkloff, St. Louis, sustained severe contusions of the hip in a collision between his buggy and a trolley car, March 20.

Society Organized.—Dr. William T. Elam, St. Joseph, councilor for the seventh district, met the physicians of Andrew County at Savannah, March 20, and assisted in the reorganization of the county medical society, with 15 charter members. The following officers were elected: President, Dr. Elijah C. Bennett, Bolckow; vice-presidents, Drs. John C. Hosher, Rosendale; Sumner S. Beever, Amazonia; Ernest H. Carpenter, Helena, and Walter C. Myers, Rea; secretary-treasurer, Dr. Clarence O. Jefferies, Savannah, and delegate to the state association, Dr. Elijah C. Bennett, Bolckow. Dr. Charles Wood Fassett, St. Joseph, read a paper on "The Benefits of Medical Organization."

NEW YORK.

Gift to Sanitarium.—John D. Rockefeller and Anson R. Flower have each given $12,500 to the Lake Kushaqua Sanitarium for Sick Working Girls, in the Adirondacks, and this gift will rid the institution of debt.

For Syracuse Hospital.—It is announced that Mrs. Russell Sage has given $5,000 toward the permanent endowment fund of the Hospital of the Good Shepherd, Syracuse, to be used for the maintenance of a free bed in the hospital.

Medical Club Election.—At the annual meeting of the Utica Medical Club, March 14, the following officers were elected: President, Dr. Andrew Sloan; vice-president, Dr. William S. Nelson; secretary-treasurer, Dr. William H. Beattie, and trustees, Drs. Morris J. Davies, William J. Schuyler and Edwin Van D. Gazzam.

Reception to Mueller.—On March 30 the Albany County Medical Society gave a reception in the rooms of the Albany Historical and Art Society in honor of Dr. Frederick Mueller, professor of medicine in the University of Munich. During Dr. Mueller's stay in Albany he was the guest of Drs. Henry L. K. Shaw and Andrew MacFarlane.

Personal.—Dr. Roswell Park, Buffalo, is taking a trip to Cuba.——Dr. William R. Campbell, Niagara Falls, was operated on by Dr. Carlton C. Frederick, Buffalo, for cancer of the liver, March 21.——Dr. H. John Hunter has been elected health officer of Ilion.——Dr. Joseph E. Vigeant, Red Hook, was seriously injured at Elizaville, March 14, while attempting to board a train in motion.

Site for State Hospital.—A bill has been introduced into the legislature authorizing the state lunacy commission to select lands for a site for a state hospital for the insane in the southeastern part of the state, the lands selected not to comprise more than 1,000 acres. This commission is to report to the legislature of 1908 in respect to the lands selected, giving reasons why they are desirable.

Quarantine Hospital.—In a report made to the health commissioner of Buffalo by Dr. Francis E. Fronczak, assistant health commissioner, he states that he finds the hospital in very good condition and ready to care for any smallpox patient who might be sent there, but says he can not see why this expensive hospital should be continued at such a cost to the city without a single smallpox patient, when there is such a great and immediate need of a hospital to care for individuals suffering from other infectious diseases. During the year ended March 31 there were reported to the board of health 2,963 cases of measles, 618 cases of scarlet fever, 530 cases of diphtheria and 287 cases of varicella and many other communicable diseases, but only one case of smallpox, and that of a very mild type.

Bills in the Legislature.—An act regulating cigar making has been introduced by Mr. Gluck, which provides that it shall be unlawful for any person making cigars to place any cigar or the materials composing it in the mouth, or to touch them with the lips during and as part of the making.——An act to amend the public health law in relation to the adulteration or misbranding of food or drugs, provides that the term "food" shall include every article of food and every beverage used by man; that the term "drug" when so used shall include all medicines for internal or external use.——A bill amending the code of criminal procedure and designed to do away with the now famous hypothetical question in cases where the sanity of the defendant is at issue has recently been introduced in the state assembly.——On April 4 the assembly amended the so-called medical unification bill, which provides for one board of medical examiners. Under the original bill it was contended that surgery might be practiced by osteopaths.

Pollution of Ice.—Dr. Porter, state health commissioner, in a paper on the "Pollution and Self-Purification of Ice," published in the monthly bulletin of the health department, states that a bill will be introduced into the legislature giving the department supervision over the business of harvesting and distributing natural ice. He shows the ways in which ice may be contaminated and also that about 50 per cent. of the bacteria in the ice would perish from exposure to the cold, and that many bacteria would be so lowered in vitality as to be incapable of producing disease. He said the real dangers are those incident to handling and distribution, to surface pollution due to flooding the ice in order to get a thicker crop, etc. The Empire State Ice Association, which has just held a convention, protested against the impression that the ice taken from the Hudson was impure and unfit for domestic use. It was stated that New York City, which used the greater part of the supply, had the lowest death rate from morbific germ diseases of any city of considerable size in the country. A report by Dr. Jackson was criticised because the samples analyzed were from cakes of ice from which the surface had not been planed.

New York City.

Personal.—Dr. Gordon Lindsay, senior surgeon at Bellevue Hospital, has been removed to Minturn Hospital, critically ill with diphtheria.—Dr. and Mrs. Thomas L. Stedman sailed for Europe on the Holland-American steamship *Noordam*, April 3.

Internes Ill.—Dr. Horace W. Frank of Bellevue Hospital is seriously ill with blood poisoning, due to an infection received during an operation.——Dr. Marcel W. Sherwood, interne at Bellevue Hospital, was removed to the Minton Hospital, March 28, seriously ill with diphtheria.

Pneumonia and Tuberculosis.—According to the winter report of the Health Department, pneumonia has succeeded tuberculosis as the chief death cause. During the three months from Dec. 8, 1906, to March 9, 1907, the deaths from pneumonia in Greater New York were 4,519, while those from tuberculosis numbered only 2,496.

Bequests.—Daniel Vincent, who died in St. Vincent's Hospital March 20, bequeathed $35,000 to the Society of St. Vincent de Paul.——By the will of the late William C. Egleston St. Luke's Hospital will receive $100,000. The will also gives $20,000 to St. Mary's Free Hospital for Children, and $15,000 to the New York Institution for the Blind.

Jubilee of Dispensary.—The fiftieth anniversary of the German Dispensary was celebrated by a dinner at Hotel Astor, March 16. This function concluded the dedicatory exercises of the new Ottendorfer Dispensary. More than 300 physicians and surgeons on the staff of the German Dispensary and German hospitals of New York were present. Dr. Pius Renn was toastmaster and souvenir medals were distributed to the guests.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended March 30, 434 cases of tuberculosis, with 221 deaths; 419 cases of measles, with 5 deaths; 379 cases of scarlet fever, with 17 deaths; 311 cases of diphtheria, with 41 deaths; 120 cases of typhoid fever, with 15 deaths; 54 cases of whooping-cough, with 9 deaths; 26 cases of cerebrospinal meningitis, with 20 deaths; and 70 cases of varicella, a total of 1,815 cases and 328 deaths.

Typhoid on the Croton Watershed.—There have been six cases of typhoid fever in the Italian camp at the Cross River dam, which is under process of construction, ten at Katonah and one at Bedford, where sewage flows into the city's water supply. A comparison of the number of cases of typhoid fever in this city for the week with the corresponding week of last year shows a notable increase in the number of cases, and every effort is being made to protect the water supply. An experimental filtration plant has just been put into operation at Jerome Park reservoir and the results will be noted daily.

Mayor Appoints Milk Commission.—The recent discussion over the problem of securing a pure milk supply for the city has resulted in the appointment of a milk commission by the mayor. The following men will serve on the commission: Drs. D. J. Bryant, former president of the board of health; T. Mitchell Prudden, Rowland G. Freeman, L. Emmett Holt and Abraham Jacobi. The work of this commission will be entirely independent of the board of health or any other city department. Any ordinance passed by the board of aldermen will have to receive the sanction of this commission before the mayor will give his signature.

NORTH CAROLINA.

Personal.—Dr. W. H. Smith, Goldsboro, has removed to Philadelphia.——Dr. James McKee has been re-elected superintendent of the Central State Hospital for the Insane, Raleigh, and Drs. Edwin B. Ferrebee and Charles L. Jenkins, assistant physicians, for a term of four years.

Date of State Society Meeting Changed.—The committee of arrangements of the Medical Society of the State of North Carolina, at a recent meeting, changed the date of meeting from May 28 to 30, to June 11 to 13, at Morehead City. This will allow the members to attend the meeting of the Surgeons of the Southern Railway at Washington, May 28 to 30; the Tri-State Medical Association at Norfolk, June 2 to 4, and the American Medical Association at Atlantic City, June 4 to 7.

State Hospital Commission Organized.—The State Hospital Commission, recently created by the legislature, met in Raleigh and organized by electing Charles A. Webb, president, and Dr. J. W. McNeil, Fayetteville, secretary. The commission has arranged for the purchase of 1,200 acres of land adjacent to the Central Hospital, Raleigh, with the idea of making extensive additions to the institution on the colony plan. Large additions of land will be made to the institutions at Goldsboro and Morgantown. The legislature has placed $500,000 at the disposal of the commission for the improvement and extension of the state's facilities for the care of the insane.

OHIO.

New Journal.—A new monthly medical journal, called the *Diagnostician*, has made its appearance in Cincinnati.

Hospital Notes.—The report of St. Anthony's Hospital, Columbus, for 1906 shows that 1,085 patients were treated during the year, with 64 deaths, one-half of which were due to tuberculosis of the lungs.——The new hospital at Warren is nearing completion and will probably be dedicated in June. The building has cost about $40,000. Miss M. E. Surbray, Akron, has been appointed superintendent of the hospital.

Epidemic Diseases.—Chagrin Falls reports at least 200 children ill with measles, and that the public schools have been closed on this account.——Dr. Charles O. Probst, Columbus, secretary of the State Board of Health, visited Castalia March 25, to investigate the epidemic of cerebrospinal meningitis. Thirteen deaths have occurred in and near Castalia and one new case was reported April 1, making 18 cases in all.——One death from cerebrospinal meningitis is reported in an adult in Toledo.

Personal.—Dr. Albert E. Griffin, Columbus, who was recently operated on for appendicitis, has been discharged from the hospital.——Dr. John L. Davis, for many years medical director of the Union Central Life Insurance Company, Cincinnati, has resigned to accept a similar position with the Pacific Mutual Life Insurance Company, San Francisco.——Dr. George W. McCoy, interne at the City Hospital, Cincinnati, has been appointed resident physician at the Manhattan Eye and Ear Hospital, New York City.——Dr. Augustus C. Schwartz, city health officer of Tiffin, has been elected physician to the Seneca County jail for one year, vice Dr. A. M. Campbell, term expired.——Dr. James F. Heady, Glendale, has been elected professor of medical economics in the Miami Medical College, Columbus.——Dr. Katharine R. Moses, in charge of the female department of the Cleveland State Hospital, has resigned.——Dr. Edwin Reinert, Columbus, has been appointed a member of the board of public safety.——Dr. Harry E. Welch has been re-elected health officer of Youngstown.——Dr. Arthur E. Osmond, resident physician at the City Hospital, Cincinnati, has resigned.

Society Secretaries to Meet.—The Ohio State Medical Association has arranged for a convention of the county society secretaries of the state to be held at Columbus, April 25, for a discussion of the work of county secretaries and for devising methods to facilitate and increase the effectiveness of the secretaries' work. A program, lasting throughout the day, is to be opened by an address of welcome by Dr. Frank Winders, secretary of the Ohio State Medical Association. The following papers will be presented: "The Relation of the Secretary to the Society and the Profession," Clyde E. Ford, secretary of the Cleveland Academy of Medicine and the Cuyahoga County Medical Society; "The Relation of the Secretary to the Council," T. W. Rankin, Columbus, councilor of the Eighteenth District; "The Relation Between Local and District Societies," J. S. Rardin, Portsmouth; "How the Secretary's Work May be Made Easier," Carrie Chase Davis, Sandusky, secretary Erie County Medical Society; "My Plan for the Struggle," Nelia B. Kennedy, Findlay, secretary Hancock County Medical Society; "What Can a Secretary Do to Secure New Members," John B. Donaldson, Lorain, secretary Lorain County Medical Society. During the noon intermission lunch will be served at the Neil House. The afternoon session will be opened by an address on "Medical Legislation," by Charles A. L. Reed, Cincinnati, chairman of the Committee on Medical Legislation of the American Medical Association. John B. Donaldson, Canonsburg, Pa., secretary of the Washington County (Pa.) Medical Society, will read a paper on "The Secretary and His Opportunity," after which papers will be read by Herschel Fisher, Lebanon, secretary of the Warren County Medical Society, on "How Can We Make 'Open Meetings' Most Successful?"; by Horace Bonner, Dayton, councilor of the Second District, on "The Social Factor in the Life of the Successful Physician," and by O. M. Wiseman, Zanesville, on "Our New Doctors." Papers by R. H. Grube, Xenia, secretary Greene County Medical Society and N. Worth Brown, Toledo, secretary Toledo and Lucas Academy of Medicine, on the value of graduate courses to medical societies in the country and in the city, will close the program. A large attendance of the county secretaries of the state is anticipated and it is hoped that much benefit to the organization will result from the meeting.

PENNSYLVANIA.

Golden Jubilee of Physicians.—Dr. Jonathan L. Forwood, mayor of Chester for four terms, and chief of the surgical staff of Chester Hospital, one of the best known physicians and surgeons in the city, celebrated the fiftieth anniversary of his entry into the profession April 7. The Delaware County Medical Society had arranged to give a banquet in honor of this event, but by the special request of Dr. Forwood gave up the idea.

Ambulances in Coal Mines.—It is reported that car ambulances are to be introduced in the anthracite coal mines of the state to facilitate the work of the first-aid-to-the-injured corps. The ambulance cars resemble the ordinary mule cars, but have springs, and two upholstered stretchers so arranged that either may be used exclusively. Each car has a full emergency equipment. The mine workers in the first-aid corps are enthusiastic over the ambulance car idea.

Hospital for Criminal Insane.—At a meeting held April 5, at Honesdale, plans for the new State Hospital for the Criminal Insane were discussed. Options on several hundred acres adjoining the site of 600 acres presented to the state by the Delaware & Hudson Railroad were obtained, and this land will be paid for from the appropriation of $10,000 for a site made by the last legislature. Assurance has been given the commission of an appropriation of $150,000 to start building, by the present legislature. The site for the administration building, which is the first to be erected, was selected. This building will contain the offices and quarters for the executive officers and accommodations for probably 100 patients. It is the intention of the commission to build an institution capable of caring for 1,000 patients, the cost of which will be eventually more than $1,000,000.

Communicable Diseases.—Of the 87,757 cases of communicable diseases reported to the State Department of Health during 1906 there were 24,421 cases of typhoid fever, 6,902 cases of scarlet fever, 10,842 cases of diphtheria, and 23,729 cases of measles. The following diseases are classed as communicable: Actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis, chicken-pox, cholera, diphtheria, epidemic dysentery, erysipelas, German measles, glanders, hydrophobia, leprosy, malarial fever, measles, mumps, pneumonia (true), puerperal fever, relapsing fever, scarlet fever, smallpox, tetanus, trachoma, trichiniasis, tuberculosis, typhoid fever, typhus fever, whooping-cough and yellow fever. The statistics of communicable diseases are to be analyzed by the department of health for the purpose of comparing them with the record of deaths from the same diseases. These statistics should be valuable in the immediate fight against disease throughout the state, and in addition will furnish permanent data for the study of social conditions and will be helpful to the students of remedial legislation.

State Board Examination.—The next examinations of the Pennsylvania State Board of Examiners will be held at Harrisburg, June 25 to 28, in Russ Hall, 15 North Second Street, and City Grays' Armory, corner Second and Forster streets. The first session will begin at 9 a. m., June 25. All candidates must have their credentials completed and have cards from the secretary of the medical council to present at the door at the time of examination. Every candidate will be required to furnish a cabinet photograph of himself, endorsed in his own handwriting on the back, and endorsed on the back by the dean of the college from which he graduated, certifying to the correctness of the photograph and to the genuineness of the signature. In cases where the dean has died or the college has ceased to exist, an affidavit signed by the candidate must accompany the signed cabinet photograph. Candidates desiring to file applications should apply to Dr. N. C. Schaeffer, secretary of the medical council, Harrisburg, or in the matters relating to work of the board, to Dr. W. D. Hamaker, secretary of the Board of Medical Examiners, Meadville.

Philadelphia.

Bequests.—According to the will of Frederick Bauer, $1,000 is left to the German Hospital.——The late Nicholas Lennig

devised $10,000 to the Maternity Hospital and $1,000 to the Philadelphia Dispensary.

Deaths of the Week.—The number of deaths from all causes in the week ended April 6 was 617, a decrease of 38 from the number reported last week. The chief causes of death were: Typhoid fever, 13; diphtheria, 10; cerebrospinal meningitis, 12; tuberculosis, 75; cancer, 28; pneumonia, 77, and Bright's disease, 50.

Personal.—Dr. Joseph Neff has been appointed director of public health and charities, to succeed Dr. W. M. Late Coplin. Dr. Neff is a member of the faculty of Jefferson Medical College and is medical director of the Jefferson Hospital.——Dr. A. Lee Clifton, who has been resident physician at the Delaware Hospital since June, has been appointed a resident physician of the University of Pennsylvania, under Dr. John Clark.

Hospital Notes.—The report of the Wills Eye Hospital shows that during 1906, 800 new patients were admitted for operation and treatment, and the clinics gave free service to 16,000 new and 80,000 old patients, from 63 counties of Pennsylvania, an average of about 300 a day. The hospital is badly in need of extensions and additions to the building, and has asked the legislature to furnish them at an estimated cost of $150,000, and allowance for maintenance of $50,000 a year.

Endorses Bill Controlling Marriage.—The Philadelphia County Medical Society, at its meeting March 15, passed the following resolution:

Resolved, That the Philadelphia County Medical Society notes with great satisfaction the introduction of a bill before the Legislature of Pennsylvania requiring certificates to the effect that both parties to a proposed marriage are in the opinion of a qualified physician free from disease transmissible to progeny. The society affirms the principle involved, and endorses the effort of the community to secure the adoption of the measure.

Banquets.—At the annual banquet of the Davis Obstetrical Society, held March 23, Dr. Edward P. Davis, honorary president of the society, acted as master of ceremonies. Drs. Hobart A. Hare, J. Chalmers Da Costa and H. Augustus Wilson and members of the faculty of Jefferson Medical College attended the banquet.——The twenty-fifth annual reunion and banquet of the medical class of 1882, of the University of Pennsylvania, was held March 16, Dr. Horace Jayne presiding. Dr. James Tyson, one of the three surviving members of the faculty at that time, was the guest of honor. Historical sketches were read by Drs. Judson Daland and William J. Taylor.

Aivarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year ($180) of the bequest of the late Señor Alvarenga, will be made July 4, provided that an essay deemed worthy of the prize shall have been offered. Essays may be on any subject in medicine, but can not have been published. They must be typewritten and must be received by Dr. Thomas R. Neilson, secretary of the college, on or before May 1. Each essay must be sent without signature, but marked with a motto and accompanied by a sealed envelope, having on its outside the motto of the paper, and within the name and address of the author.

Jubilee of Pathological Society.—Elaborate preparations are being made by the Pathological Society of Philadelphia to celebrate in a fitting manner the fiftieth anniversary of its founding. The morning of the first day, May 10, will be devoted to the welcoming of guests and to addresses by distinguished men from different parts of the country. A luncheon to members and guests will be served at the University Club at 2 p. m., and two hours later a commemorative meeting will take place in the amphitheater of the Pennsylvania Hospital, where the first meetings of the society were held.. Dr. William Osler, regius professor of medicine, Oxford University, will deliver the principal address. An exhibition of pathologic specimens will be opened to guests, members and profession at large on Friday and Saturday in the Mütter Museum of the College of Physicians.

TENNESSEE.

Officers Re-elected.—At the annual meeting of the State Board of Health, April 7, Dr. Heber Jones, Memphis, was re-elected president, and Dr. Thomas E. Abernathy, Chattanooga, vice-president.

Communicable Diseases.—More than 200 of the pupils of the schools of Knoxville are reported to be suffering with measles. ——The smallpox situation in Weakley County is reported to be unimproved, several new cases having developed near Greenfield.

TEXAS.

Health of the State.—State Health Officer William Brumby, Austin, asserts that smallpox is spreading in certain counties of the state and that approximately 20 counties are affected. ——An epidemic of measles is reported at Killeen.

Personal.—Dr. Roland C. Connor, Roby, has been appointed on the medical staff of the Canal Zone.——Dr. Aleck Spencer, Temple, has resigned as health officer of Bell County and has been succeeded by Dr. Taylor Hudson of Belton.——Dr. O. T. Brundy, Milford, has been appointed surgeon to the Confederate Home, Austin.

Hospital Notes.—The senate committee on public health made a favorable report, March 25, on the house bill appropriating $150,000 for the establishment of a state sanitarium for tuberculosis.——The annual report of Sealy Hospital, Galveston, shows that in 1906 there were 40,556 hospital days, a gain of 4,434 as compared with 1905. The daily average of patients for the year was 111, and 1,550 patients were admitted.

War on Mosquitoes.—At the last meeting of the board of city commissioners of Galveston, Dr. Charles W. Trueheart, city health officer, was granted permission to advertise for 120 barrels of crude carbolic acid, for the use of the department during the coming summer to combat the mosquitoes and diminish the plague of house flies in the city.——The campaign against mosquitoes has commenced in San Antonio and good work is being done by the children of the public schools.

VIRGINIA.

Personal.—Passed Assistant Surgeon Rupert Blue of the United States Public Health and Marine-Hospital Service has been made chief of the department of sanitation at the Jamestown Exposition.——Dr. M. F. Hansbrough, Front Royal, was painfully injured in a runaway accident at his home, March 30.

Honor to Dr. Reed.—The State Library Board has appointed an art committee, of which Admiral Harrie Webster is chairman, to select a portrait of the famous surgeon and bacteriologist, the late Dr. Walter Reed, major and surgeon, United States Army, who was born at Harrisburg, Va., to be placed in the library.

Anti-Mosquito Crusade.—An anti-mosquito crusade is to be inaugurated in Norfolk during the summer by Health Commissioner Dupuy of that city, who will be assisted in the work by Surgeon Charles P. Wertenbaker and Passed Assistant Surgeon Rupert Blue of the United States Public Health and Marine-Hospital Service.

GENERAL.

Yellow Fever in Cuba.—Major Jefferson R. Kean, U. S. Army, reported on April 6 a case of yellow fever at Nueva Paz, in the southeast corner of Havana province. The patient was a Spaniard who had arrived from Spain December 13, and had not left the part of Cuba in which he was taken ill since that time. There is believed to be no reason to fear infection in Havana.

Internes Wanted in Insane Hospital.—The United States Civil Service Commission will hold examinations June 13 and 14, at the usual cities throughout the United States, to supply medical internes in the Government Hospital for the Insane, Washington, D. C. This examination is open to men who are citizens of the United States, aged 20 years or over, and graduates of reputable medical colleges. Applicants should apply at once to the commission at Washington for application form 1312.

Attitude of the Filipinos Toward the Leper Hospital.—Dr. Heiser, chief quarantine officer, reports that a remarkable change seems to have come over the people in reference to their attitude toward the leper hospital. It is almost a daily occurrence for persons to apply voluntarily to the bureau of health for hospitalization. Many individuals have come from the colonies and requested that they be admitted to San Lazaro Hospital until they could be sent to the Culion leper colony. These facts, Dr. Heiser states, are significant and point to an improvement in the attitude of the people.

Tropical Medicine Men Meet.—At the third annual meeting of the American Society of Tropical Medicine, held at the New York Academy of Medicine, March 29, papers were read by Surgeon Leckinski W. Spratling, U. S. Navy, on "Yellow Fever Sanitation," and Major Louis Livingston Seaman, U. S.

V., on "Observations on Health and Disease in Eastern Africa." The following officers were elected: President, Dr. James M. Anders, Philadelphia; vice-presidents, Drs. Rudolph Matas, New Orleans, and William S. Thayer, Baltimore; secretary, Dr. John M. Swan, Philadelphia; treasurer, Dr. James Ewing, New York City, and members of the council, Drs. Ramon Guiteras, New York City, and Joseph McFarland, Philadelphia.

New Roentgen Ray Journal.—The latest addition to medical periodicals is the *American Quarterly of Roentgenology*, of Pittsburg, Pa., published by the American Roentgen Ray Society and edited by its president, Dr. Preston M. Hickey, Detroit, Mich. This journal takes the place of the annual transactions of the society, and is the property of the society. The first issue reflects great credit on the society and promises much for the future. The policy of the society in reference to advertisements is not referred to in the editorial foreword, but judging from the advertisements that appear in the first issue, the pages are open only to those who have something to exploit that is of particular interest to roentgenologists. The size of the journal is convenient and the mechanical work is excellent.

Graveyard Regulations in the Philippines.—One of the most important sanitary measures—certainly one of the most difficult and laborious—according to Dr. Heiser, of the bureau of health of the Philippine Islands, is the regulation of the cemetery question in accordance with the law, which states that it shall be unlawful to establish, maintain, enlarge or remove any burial ground or cemetery until a permit therefor shall have been obtained from the director of health. This necessitates a careful examination into the sanitary conditions of all existing cemeteries. The cemetery question has long been a neglected one and this makes its regulation more difficult. Many municipalities are establishing municipal cemeteries in which interments may be made without discrimination on account of race, nationality or religion.

Vaccination in the Philippines.—In his report for the last quarter of 1906 Dr. V. G. Heiser, chief quarantine officer, states that vaccination had to be temporarily abandoned in Antique, because of a report that the people were being inoculated with the virus of leprosy, and in Occidental Negros, on account of a report that the people were being inoculated with cholera germs. On the island of Luzon, particularly on the coast line, with the exception of a portion of Tayabas, Sorsogon and Albay provinces, all the inhabitants have been protected. As the travel is principally betwen coast cities, the danger of the spread of smallpox is considerably lessened. This systematic scheme of vaccination has already borne results, as attested by the fact that there is less smallpox in the Philippines today than perhaps at any time during the past 300 years. Whenever the vaccination of a province is completed the work is followed up by vaccinating, at intervals of every six months, all the children who have been born during that period, and all unvaccinated persons who may have taken up their residence there during the interim. During the quarter covered in the report the work of vaccinating the inhabitants of Cebu was completed. This is the first time in the history of the Philippines that the people of the entire province, numbering over three-quarters of a million, have been vaccinated. The complete vaccination of the inhabitants of Union province was also terminated during the quarter. A clinical note on this work appears in this issue, page 1264.

CANADA.

Infectious Diseases.—The number of cases of infectious diseases in Montreal in March was 356, of which 101 were of tuberculosis.——Over 1,000 residents of Three Rivers, Que., are reported to have typhoid fever, and the death rate is double the normal.

Personal.—Dr. J. H. Elliott has resigned from the Muskoka Cottage Sanatorium and has been succeeded by Dr. W. J. Dobbie of the Western Free Consumption Hospital, near Toronto. Dr. Elliott will spend several months abroad.——Dr. Henri Hervieux, Montreal, will succeed the late Sir William Hales Hingston on the board of governors of Laval University.

Hospital News.—The Canadian Hospital Association was organized in Toronto, April 1. Miss Louis Brent of the Sick Children's Hospital, Toronto, was elected president, and Dr. John N. E. Brown, superintendent of the Toronto General Hospital, secretary. Dr. Renwick R. Ross, Buffalo, N. Y., delivered an address. In connection with the Ontario hospitals, it was anonunced at this meeting that the government had raised the grant 20 cents per patient per day.——The Vancouver (B. C.) General Hospital will spend an additional $20,000 on hospital equipment.——The twentieth annual report of the board of management of the Protestant Hospital for the Insane at Verdun, Que., shows that on Jan. 1, 1906, there were 503 patients in residence. During the year there were admitted 87 men and 64 women. The discharges numbered 110, and the deaths 31, leaving in the institution at the end of December 507 inmates.

FOREIGN.

International Congress of Physiotherapy.—As already mentioned in these columns on page 1195, the Second International Congress of Physiotherapy will be held at Rome, Italy, Oct. 13-16, 1907, under the presidency of Hon. Prof. Guido Baccelli. Prof. Carlo Colombo, Via Plinio, 1, Rome, is the secretary. The American committee has been appointed with Dr. Francis B. Bishop, Washington, D. C., as president, and Dr. William Benham Snow, 349 West Fifty-seventh Street, New York, secretary.

Plague in the Ottoman Empire.—Dr. Post, American representative on the International Sanitary Board, reports that bubonic plague is on the increase at Djeddah, the port of Mecca. When the first cases were reported great numbers of pilgrims were passing through Djeddah on their way to Mecca, and it was feared that the plague would break out among them. A special meeting of the International Sanitary Board was called, and measures were taken to prevent its spread. These were so successful that up to February 24 no case of plague had occurred among the pilgrims, over 100,000 in number.

Morphin from Mail Order Houses.—The *Münch. med. Wochschr.* relates that a Paris firm advertised in a German lay weekly that it would supply physicians and apothecaries "in discreet cases what they could not otherwise obtain." A German physician wrote to know if he could obtain morphin from the firm and received a prompt affirmative reply, with instructions as to the use of the morphin, "1 cg. for one injection, and never more than three injections a day. Internally 2.5 cg. to begin with." The price charged was about $1 for 15 grains. As no order was forthcoming, the firm wrote again to offer the morphin at half price. The article adds that customers can order and receive morphin from the large French department stores.

Bicentennial of Linnæus.—The scientific organizations of Sweden are making preparations to celebrate in the week of May 12 the two hundredth anniversary of the birthday of the great botanist, Carl von Linné, better known by his Latinized name, Linnæus. As was mentioned recently in an editorial in THE JOURNAL, Linnæus was a physician, having taken a medical degree in the Netherlands in 1735, and four years later was appointed physician to the king of Sweden and professor of botany at Upsala. He had published before this a work on the flora of Lapland, which he had explored under the auspices of the Swedish Academy of Sciences. It was followed by numerous other works on botany which won for him the title of the father of systematic botany and of the binomial nomenclature of species. The celebration of the bicentennial will be held at Upsala, where Linnæus lived, and where he died in 1778.

Misuse of Names by Quacks.—A German "magnetopath," C. Pohl, stated in the circulars he has been distributing, that Virchow came to him for treatment of a throat affection and was cured by him, giving the date and other particulars, and citing Virchow's expressions of confidence in his magnetic treatment. The magnetopath was recently before the courts for fraudulent practices and was condemned to a fine of $15 and 12 days' imprisonment. In the course of the trial his lawyer referred to the Virchow incident and remarked that Dr. H. Virchow, Virchow's son, would confirm his client's statements in regard to the successful treatment of his father. No notice was taken of the matter by the Virchow family, but Dr. H. Virchow has since written a letter on the subject to the *Deutsche med. Wochschr.*, page 517, discussing the legal phases of this outrageous misuse of his father's name and whether the magnetopath or others like him could be prosecuted for such statements. He seems to be inclined to think that the sentence imposed, even if the charlatan were condemned, would not outbalance the advertising for the charlatan in case suit were brought against him. The affair has three aspects, that bearing on his father, that on the interests of the public, and that bearing on the interests of the medical profession. In regard to his father, young Virchow thinks that no denial is needed fr m him. The interests of the pro-

fession in the struggle against unscrupulous quackery have compelled him to discuss the incident, especially the lawyer's statement in the above case. He is informed that the law does not require the lawyer to ascertain the truth of such assertions on his client's behalf, and remarks, "When a lawyer is legally allowed to shield his client by making such baseless statements, it would be very foolish for the charlatan not to profit by such a fortunate circumstance." It is possible that the charlatan will continue in the future the misuse of Virchow's name, as this matter had nothing to do with the sentence imposed and no steps have been taken to date to stop it.

Twenty-fifth Anniversary of the Discovery of the Tubercle Bacillus.—On March 24 just 25 years had elapsed since Robert Koch reported the discovery of the tubercle bacillus in a communication read before the German Physiological Society. In the *Deutsche med. Wochschr.* for March 21, Loeffler gives an interesting sketch of the occasion. Koch had been called from his obscure post in a country district to Berlin just two years before, not long after his publications on mouse septicemia and anthrax had attracted general attention. On arriving at Berlin, just 37 years old, he met with a frosty reception from Virchow, and his announcements were criticised by Virchow's followers, especially in the local medical societies. The Physiological Society, however, under the leadership of Dubois-Reymond, gave him unprejudiced attention and supplied certain facilities for his further research. Consequently it was to that society that he turned when ready to publish his discoveries on tuberculosis. The hall was crowded to hear his communication "On Tuberculosis," although no hint of its importance had got abroad. As he presented the array of facts which he had established every one present felt the importance of the occasion and not a word was spoken, not even when he had finished, the session closing without a word of discussion. The next day his demonstrations were thronged with scientists, including Virchow, but it was years before the latter ever spoke of the bacillus except as "the so-called tubercle bacillus." Koch's staining technic was an accidental discovery while he was seeking to photograph the bacilli. He assumed that the blue-stained bacilli would show better in a photograph if the whole specimen were stained further with Bismarck brown, but examination of the specimens later showed that the bacilli still retained their blue tint when all else had turned brown. He also found that this did not occur when a fresh solution of methylene blue had been used. This suggested that some substance in the air must act on the blue solution as it stands, and he surmised that this might be ammonia as the air of a laboratory generally contains considerable ammonia. A little ammonia added to the fresh solution of the blue made it act as he wished, and he then assumed that any alkali would have the same effect. This was the basis of the finally perfected stain.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

VIENNA, March 19, 1907.

Sexual Problems in the Upper Schools.

The movement for fighting venereal diseases by public instruction has called attention to the fact that numerous sexual infections take place simply from ignorance of the danger and of the means of prevention. Thus, in German-speaking countries, the university students at once, on entering the "alma mater," come under influences of free-thinking and unscrupulous circles, and the contrast between the strict supervision in the preparatory schools and the absolute liberty in the university tends to turn the attention of the young men to sexual matters, with the result that 30 per cent. of all gonorrheal and 25 per cent. of all syphilitic primary infections occur between the ages of 20 and 22, when, in our countries, the youths enter the university. In a few of the preparatory schools, the pupils during the last term are now instructed in the facts of sexual dangers. Another important achievement of the recent movement, in which several professors of the university are interested, is the "Instructions-Blatt," a leaflet explaining in a few words the chief symptoms of sexual diseases and warning against treatment by quacks and secret remedies. This leaflet is handed to the young laborers and factory hands, to students on matriculating, and to the scholars of the trade-schools on leaving.

Correction: **Gastric and Enteric Nomenclature.**—In the table on page 1299 of this issue is an error. The lower half of table should be marked, at the left, "Enteric" instead of "Gastric."

Correspondence

Disclaimer Concerning a Book on Fractures by Lamb.

U. S. ARMY MEDICAL MUSEUM AND LIBRARY,
WASHINGTON, D. C., March 28, 1907.

To the Editor:—For the past two years the Postoffice Department here has been receiving every day or so letters addressed to "Prof. D. K. Lamb, Curator National Medical Museum," and has been sending them to me for want of anybody else who comes anywhere near filling the bill. There is no Prof. D. K. Lamb in this city; and no institution of that name; nor am I curator of any museum. These letters come from all parts of the country east of the Mississippi, and they ask for a copy of the "New Methods of Reducing Fractures and Dislocations." I am unable to learn of any such book published here or distributed from here, gratuitously, as the applicants all evidently understand. I have replied to a number of these letters, but can not continue to do so.

D. S. LAMB.

Miscellany

Scarlet Fever Seven Times.—This occurrence is reported by a Spanish writer, cited in the *Münch. med. Wochschr.*, liv, 283. The first attack occurred at the age of 7 and the latest at 21. The disease is said to have been diagnosed by some of the best authorities in Spain each time.

Case of Fatal Xerostomia.—Zagari describes a case of dryness of the mouth from total absence of the salivary secretion, owing to atrophy of all the maxillary, parotid and sublingual salivary glands. The patient was a woman of 50 and she succumbed in less than two years to the marasmus resulting from lack of the secretions of the salivary glands. Autopsy revealed a syphilitic or parasyphilitic lesion in the upper part of the oblongata. He concludes that there must be at this point an anatomic nucleus presiding over the salivary glands and also over the sense of taste in the anterior two-thirds of the tongue, as function was abolished over this stretch in his case. From this bulbo-spinal center a neuron evidently passes through the chorda tympani to the salivary glands. The histologic findings in the case are shown in several illustrations accompanying his communication in the *Policlinico*, xiv, 45, 1907.

Contagion of Leprosy.—Since the establishment of the third leprosorium in Russia, at Wenden, 10 years ago, it has sheltered 183 lepers. Kiwull's report of its work is published in the *St. Petersb. med. Wochschr.* for January 26. He mentions a number of instances of proved transmission of the disease. In two cases the leprous wife infected her husband; in two, the father his son; in four, the father his daughter; in four the mother, one or more children, and in one family the father, with tubercular leprosy, infected his brother, his sister and his four children. In four cases a brother or sister became infected; in eight, an inmate of the house. Two patients ascribed their infection to having worn garments used previously by a leper, and two other patients to washing the garments of a leper. The tubercular form seemed more malignant than the other macular variety, both in regard to its course and to infection of others.

Microscopic Examination of Endotheliomata of the Neck.—Wyatt Wingrave, pathologist to the Central London Throat Hospital, states that during the last year he has examined several growths, belonging to the tumors described as endotheliomata, removed from the cervical and parotid regions, and from the upper respiratory and digestive tracts. These tumors, he asserts, may be defined as neoplasms developed from and following the type of epitheliod or mesotheliod cells, such as are found lining blood and lymph vessels. When starting from the lining of perivascular lymph spaces they are called peritheliomata, but, he declares (*Journ. Laryn., Rhin. and Otol.*, London), there is no essential difference in the character of their elements. Formerly, they were somewhat

loosely termed "adenosarcoma," "atypical carcinoma," "mixed sarcoma," but Wingrave states that on looking over old preparations he would now unhesitatingly describe them as endotheliomata. The tumors may originate either from the epitheliod lining of vascular channels, blood and lymphatic (endotheliomata), or that surrounding the vessels (peritheliomata). Cytologically, there is no difference, but the spreading and grouping of the essential elements are somewhat different. The tumors are also said to arise in vestigial structures, such as occur in connection with the branchial clefts on and in the intercarotid gland, probably from angioblastic elements. In structure, they are usually firmly encapsulated. The stroma is well marked, either fibrillated or homogeneous, forming spaces of varying size. Cells when present are elongated, fusiform and closely packed, sometimes encapsulated, giving the appearance of cartilage. The matrix contains mucigen or collagen. The essential endothelial elements are cells which, though varying in size and shape, always possess the characteristic of the epitheliod or mesothelial cells, viz., large oval nuclei, having a fine close chromatin network and staining faintly with hemalum. The cytoplasm is abundant and very finely granular or clear. The cells may be columnar, spheroidal, flattened or fusiform. Very rarely they are laminated, forming pearls like ordinary squamous epithelium, from which they may be easily distinguished. Hetero-mitoses are not common, neither is lymphocytosis with wandering chromosomes—features so characteristic of epitheliomata.

Electricity Barred from Turkish Hospitals.—H. Paull of Carlsruhe writes entertainingly in the *Deutsche med. Wochschr.* February 28, of a trip in the eastern Mediterranean. He states that the Sultan is convinced that electric lights, electric tramcars, telephones, etc., are devices of the evil one, and that he has strictly forbidden their use throughout his dominions. This deprives the hospitals of radiology and electrodiagnosis, etc. In the Turkish hospitals, besides, the thermometer is regarded as superfluous. Dr. Deycke, formerly of Hamburg, is in charge of the Gülhane Hospital at Constantinople, and by great diplomacy and tact he secured permission to use electricity in this hospital. Not long ago he received orders from the Sultan to vacate the hospital entirely and to remove all the inmates and equipment, as the Sultan wanted to attend the great mosque near by and did not wish to be disturbed by the presence of the sick and of the diabolical electric machines so near him. Again the sturdy German's diplomacy brought him successfully through this crisis, but the hospital suffers constantly from an utter lack of funds to maintain it properly. In Greece, on the other hand, Paull says, the hospitals are equipped and maintained on a level with the standard of western civilization; even rubber gloves are not wanting. He comments on the immense number of bladder stones preserved in the hospital at Smyrna. The composition of the water is locally regarded as the cause of this tendency to bladder stones. [This traveler's experience seems not in accord with the reports of the Constantinople correspondent of the London *Lancet*. The latter gives the impression that a large proportion of Turkish hospitals are pretty fairly equipped with modern appliances.]

Association News

HALF FARE TO ATLANTIC CITY.

One Fare for Round Trip to the Annual Session of the American Medical Association.

The New England Passenger Association, the Trunk Line Association and the Central Passenger Association have granted a rate for the round trip of one first-class limited fare plus $1. Tickets will be good, going, June 1 to 4, inclusive; returning, leaving Atlantic City June 4 to 10, inclusive. By deposit of the ticket by the original purchaser, in person, with the special agent at Atlantic City not later than June 10, and payment of fee of $1 at time of deposit, an extension of the return limit may be obtained to leave Atlantic City not later than June 14.

Thus far the Western Passenger Association has granted only a rate of one and one-third fare for the round trip, but the matter has been taken under further consideration and it is hoped that a half-fare rate will be secured in the territory covered by this association also.

The Transcontinental Passenger Association has granted a one first-class 30-day fare for the round trip, tickets to be on sale May 20 and 21. Final arrangements of this association with the eastern passenger associations have not yet been made. The Transcontinental Passenger Association covers the western part of the United States, including all of the Pacific Coast.

NEW MEMBERS.

List of new members of the American Medical Association for the month of March, 1907:

ALABAMA.

Christopher, F. E., Isney.
Glass, E. T., Birmingham.
Goodman, D. W., Mobile.
Grout, S. E., Bessemer.
Huggins, Jacob, Newbern.
Manning, J. T., Lineville.
McKee, H. C., Hartselle.
Moseley, D. C., Faunsdale.
Odom, J. I., Littleton.
Riley, H. C., Coffee Springs.
Shropshire, C. W., Birmingham.
Smith, R. L., Palos.
Thomas, J. R., Albertville.
Whiteside, J. M., Anniston.

ARIZONA.

Neff, Mary L., Oracle.
Powell, C. S., Benson.
Southworth, H. T., Prescott.

ARKANSAS.

Hamm, E. F., Texarkana.
Lee, F. A., Mena.
Longino, H. A., Magnolia.
Nall, R. P., Armorel.
Powell, J. W., Springfield.
Roop, J. W., Crossett.
Stevens, C. D., Magnolia.
Taylor, I. S., Crossett.
Wilson, G. L., Hermitage.
Wommack, W. E., Hermitage.

CALIFORNIA.

Bacon, C. E., Los Angeles.
Bishop, T. W., Pasadena.
Cohen, Albert, San Francisco.
Cook, W. V., Pasadena.
Decker, C. W., Los Angeles.
Ford, J. C., Rocklin.
Frick, D. J., Los Angeles.
Henrikson, Gustav, Sacramento.
Johnson, W. S., Los Angeles.
McCoy, Alva D. S., Pasadena.
McNaughton, J. A., Los Angeles.
Miller, A. V., Oakland.
Roth, L. J., Los Angeles.
Silvia, Clara A., Gilroy.
Thompson, J. G., Oakdale.
Trewhella, J. S., Rivera.
Walker, Agnes, San Francisco.
White, A. H., Crockett.
White, S. T., Redding.

COLORADO.

Abrahams, H. E., Denver.
Carlson, B. W., Cheyenne Wells.
Edwards, G. M., Denver.
Lee, H. C., Tabasco.
Moore, Clara M., Denver.
Stilwell, H. R., Denver.
Weller, Miles, Denver.

CONNECTICUT.

Bissell, J. S., Torrington.
Meeks, H. A., Meriden.
Minor, G. M., Waterford.

DISTRICT OF COLUMBIA.

Jewett, H. M., Washington.
Marshall, Collins, Washington.

FLORIDA.

Carswell, S. T., Citra.
Pollock, W. A. J., Pensacola.
Prince, J. M., Live Oak.
Willis, J. M., Williston.

GEORGIA.

Adams, R. P., Bethlehem.
Cunningham, F. M., Macon.
Giddings, C. G., Atlanta.
Johnson, G. F., Griffin.
Johnston, F. C., Walden.
Kilpatrick, A. J., Augusta.
Michel, H. M., Augusta.
Oglesby, C. R., Waycross.

IDAHO.

Davis, W. N., Wardner.

ILLINOIS.

Allen, W. G., Chicago.
Bishop, E. H., Chicago.
Brooks, E. W., St. Elmo.
Brode, W. D., Chicago.
Butler, Jacob, East St. Louis.
Brimble-Combe, Wm., Carmi.
Davies, R. H., Chicago.
Dunavan, L. W., Chicago.
Ellis, W. L., Grayville.
Evans, Florence L., East St. Louis.
Goldenburg, Michael, Chicago.
Gulbrandsen, G. H., Chicago.
Hill, C. E., Aviston.
Johnson, L. M., Arrowsmith.
Lippert, J., East St. Louis.
Lyford, W. H., Port Byron.
Macauley, T. E., Elgin.
MacKellar, O. W., Chicago.
Mandel, Milton, Chicago.
Marten, John, Tolono.
McCaw, J. A., Herscher.
Nagel, F. E., Chicago.
Palm, Milton, Dwight.
Robinson, J. W., New Berlin.
Ross, G. W., Watseka.
Sawyer, C. F., Chicago.
Secor, W. L., La Grange.
Troutt, J. J., Nashville.
Will, H. C., Chicago.

INDIANA.

Clements, H. J., Converse.
Gudgel, J. E., Cynthiana.
Kohr, T. W., Hammond.
Long, J. B., Indianapolis.

IOWA.

Anderson, H. N., Scranton.
Charlton, A. J., Bennett.
Knowles, J., Logan.
Lang, C. C., Altoona.
Mantz, M. Alace, Des Moines.
Shuler, Anne M., Davenport.
Thomas, L. A., Des Moines.

KANSAS.

Brookhart, H. H., Scammon.
Heidrick, D. L., Welda.
Hull, R. W., Kincaid.
Jack, W. G., Chautauqua.
McDowell, W. H., Iola.
Reid, C. T., Carona.
Townsend, C. R., Centralia.
Walker, G. W., Chetopa.
Wuttke, E. E., Halstead.

KENTUCKY.

Bethel, J. T., Henderson.
Brown, R. K., Louisville.
Elmore, R. R., Louisville.
Rodman, H. D., Bardstown.

LOUISIANA.

Frater, F. J., Shreveport.

MARYLAND.

Gaddess, H. W., Baltimore.

MASSACHUSETTS.

Bruce, H. M., Brookline.
Conroy, E. C., Andover.
Graves, J. C., Jr., Boston.
Jones, Everett, Brookline.
Levy, F. J., Boston.
Lloyd, H. D., Boston.
MacOdrum, Angus, Boston.
Maguire, T. H., Dorchester.
May, J. S., Boston.
Thurber, M. T., Dorchester.
Wolcott, W. W., Natick.

MICHIGAN.

Breece, R. C., Ada.
Charles, H. L., Paw Paw.
Hensel, R. D., Detroit.
MacIntyre, Donald, Muskegon Heights.
MacNett, F. J., Traverse City.
McCormick, F. T., Detroit.

Murphy, N. D., Bangor.
Skinner, C. E., Howell.
Stroud, H. A., Douglas.
Whiteshield, C. F., Harbor Springs.

MINNESOTA.

Christie, G. R., Long Prairie.
Emmke, W. C., Willow River.
Hare, E. R., Minneapolis.
Hopkins, Mary P., St. Peter.
Hunt, H. E., St. Paul.
Kane, J. P., Hibbing.
Williams, Robert, Minneapolis.

MISSISSIPPI.

Carroll, G. F., Biloxi.
Cuming, H. T., Gloster.
Holloman, T. B., Jr., Itta Bena.
Hood, B. S., Bond.
Smithson, W. W., Jackson.
Sweaney, J. H., Durant.

MISSOURI.

Brooks, W. W. Stanberry.
Bruehl, Julius, Kansas City.
Bryson, E. H., Bethany.
Chambers, J. C., Schell City.
Chilton, J. A., Van Buren.
Chilton, T. W., Ellington.
Chipp, J. K., Newhampton.
Clemens, J. R., St. Louis.
Cloonan, Martin, Ruble.
Cross, R. O., Kansas City.
Dean, J. McH., St. Louis.
Evans, A. L., Bonne-Terre.
Fritts, O. C., Gerald.
Hamel, G. T., Kansas City.
Hamilton, H. D., Kansas City.
Hinchey, Frank, St. Louis.
Klie, G. H. C., St. Louis.
Lee, L. E., Weatherby.
Luedde, W. H., St. Louis.
Mallett, E. P., Kansas City.
Martin, J. W., Kirksville.
Moore, J. H., Centerville.
Nesbitt, E. P., Sheridan.
Proud, W. C., Oregon.
Raithel, G. H., St. Louis.
Rice, F. D., Lucerne.
Rice, William, Kansas City.
Scott, W. B., Bucklin.
Sparr, E. E., Amsterdam.
Stewart, B. S., Bethany.
Wetzel, N. M., Jameson.
Williams, A. W., Ridgeway.
Yeater, H. P., Maysville.

MONTANA.

Carroll, J. V., Fort Benton.

NEBRASKA.

Brooks, E. B., Pawnee City.
Elliott, W. M., Newcastle.
Frink, F. L., Newman Grove.
Kavanaugh, Peter, Schuyler.
Martin, E. W., Fremont.
Minnick, C. E., Indianola.
Woods, James, Schuyler.

NEVADA.

Keen, E. R., Black Horse.

NEW JERSEY.

Duncan, O. B., Haledon.
Maclay, J. A., Paterson.
Van Dyke, J. S., Hackensack.

NEW MEXICO.

Lauson, A. E., Anthony.

NEW YORK.

Acken, T. M., New York City.
Bassin, J. N., New York City.
Bartlett, C. R., Boonville.
Blake, J. Eddy, Brooklyn.
Blatteis, S. R., New York City.
Brennar, R. E., New York City.
Brodie, R. E., Albion.
Carr, W. L., New York City.
Chiarulli, F. S., Syracuse.
Cramp, W. C., New York City.
Darling, B. C., Washingtonville.
Dingman, J. Clarence, Spring Valley.
Downey, J. M., Brooklyn.
Emans, J. Seymour, New York City.
Fahnestock, Ernest, New York City.
Farr, E. H., New York
Fendler, Amelia M., New York City.
Field, F. H., New York City.
Fosbury, L. D., Endicott.
Frasch, W. F., Rochester.
Glosser, H. H., Buffalo.
Griswold, Henry, New York City.
Hargrove, F. C., New York City.
Jewett, W. A., Brooklyn.
Irving, Peter, New York City.
McCollom, W. E., Brooklyn.
McDonald, Ellice, New York City.
O'Leary, D. V., Jr., Albany.
Rulison, L. B., Watervliet.
Schwerdtfegen, O. M., New York City.
Sheehan, T. J. G., Buffalo.
Sherman, F. A., Watertown.
Stewart, D. H., New York City.
Taves, A. W., New York City.
Weismann, F. H., New York City.
Winfield, J. M., Brooklyn.
Young, C. D., Rochester.

NORTH CAROLINA.

McNatt, H. W., Maxton.

NORTH DAKOTA.

MacKay, A. R., Bottineau.

OHIO.

Butt, S. E., Nelsonville.
Halter, M. V., Akron.
Kerr, I. J., Cleveland.
Patrick, B. W., Toledo.
Powers, H. W., North Amherst.
Wright, W. E., Newark.

OKLAHOMA.

Phillips, Lewis, Seward.
Share, A. L., Kingfisher.

OREGON.

Mingus, Everett, Marshfield.

PENNSYLVANIA.

Bartle, H. J., Philadelphia.
Graves, I. S., Jermyn.
Hanna, D. B., Stoneboro.
Koons, P. R., Mechanicsburg.
Onstott, Elmer, Saltsburg.
Patterson, R. V., Philadelphia.
Rivenburg, S. W., Clifford.
Schock, H. E., Philadelphia.
Snively, R. D., Philadelphia.

RHODE ISLAND.

Abbott, Edmund, Providence.
Beck, H. P., Newport.

SOUTH CAROLINA.

Pryor, S. W., Chester.

SOUTH DAKOTA.

Ashcroft, F. E., Deadwood.
Skogen, T. T., Flandreau.
Wright, O. R., Huron.

TENNESSEE.

Sneed, J. W., Brentwood.

TEXAS.

Allen, G. W., Jr., Yorktown.
Bean, B. F., Kirbyville.
Boyce, W. A., Commerce.
Conall, E. S., Center.
Cowan, W. B., Dialville.
Ellis, G. S., Sherman.
Gregg, F. C., Manor.
Guenther, J. G., Moultan.
Herrington, I. C., Orange.
Hooper, R. B., Van Vleck.
Johnston, L. S., Atlanta.
Leonards, H., New Braunfels.
Mahaffey, M. L., Sabinal.
Mantooth, Lafayette, Lufkin.
Martin, B. J., Leggett.
McLaughlin, F. P., Austin.
Moore, R. W., Ft. Worth.
Pearce, A. G., Orange.
Plotts, P. B., Anderson.
Taylor, J. S., Cookville.
Whiteside, M. H. E., Timpson.
Williams, E. D., Nacogdoches.

UTAH.

Donohen, W. D., Salt Lake City.
Raley, F. H., Salt Lake City.
West, T. J., Salt Lake City.

VIRGINIA.

Price, L. T., Richmond.

WEST VIRGINIA.

Burden, Frank, Capon Bridge.
Goodman, H. L. Thayer.
Holsberry, F. S., Bower.
Matheny, B. F., Meadowbrook.

WISCONSIN.

Allen, W. J., Beloit.
Brown, R. C., Milwaukee.
Dirks, C. B., Wauwatosa.
Lueck, G. W., La Crosse.
Morley, F. E., Viroqua.
Oakland, H. G., Milwaukee.
Thewalt, W. B., Poy Sippi.

WYOMING.

Tonkin, A. B., Riverton.

PHILIPPINE ISLANDS.

Pond, Arlington, Cebu.
Warmsley, W. C., Tuguegarno.
Cagayan.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

BOOKS ON URANALYSIS.

EUREKA, CAL., March 20, 1907.

To the Editor:—Please name a text-book on uranalysis that explains the clinical significance and method of determination of total nitrogen, urea nitrogen and ammonia nitrogen in urine—the nitrogen partition. Will you also give a ready and rapid method for determining the (1) total nitrogen, (2) the nitrogen as urea, and (3) the ammonia nitrogen, the ammonia coefficient?

JOHN J. GAYNOR, M.D.

ANSWER.—The following text-books give the methods of determining the total nitrogen and contain discussions in regard to the distribution of the urinary nitrogen in urea, ammonia and other nitrogenous compounds: Boston's "Clinical Diagnosis," Croftan's "Clinical Urinology," v. Jaksch's "Clinical Diagnosis" and most text-books on physiologic chemistry.

The best method of determining the total nitrogen is that of Kjeldahl, as it enables the operator to perform a number of determinations at the same time. If the necessary apparatus is once properly installed the method is rapid. The method is based on the following principle (quoted from Croftan): "The nitrogenous constituents of the urine on boiling with concentrated sulphuric acid are destroyed and all the nitrogen that is not in direct combination with oxygen is converted into ammonia; the latter combines with the sulphuric acid and goes into solution as sulphate of ammonia. The bodies that contain nitrogen in direct combination with oxygen are present in such small quantities (and occasionally not all) that they may be neglected for practical purposes. The acid solution of ammonium sulphate is treated with hot soda lye and the ammonium thus liberated caught in a measured quantity of normal acid and the excess of acid titrated back; from the amount of ammonia formed the nitrogen of the urine can readily be calculated." The quickest clinical method for determining the urea nitrogen is the hypobromite method of Hüfner (Knop). The apparatus required for this determination is simple and the method is rapid of execution. It is based on the principle that sodium hypobromite in alkaline solution decomposes urea into nitrogen, carbon dioxid and water. The carbon dioxid that develops is absorbed by the alkaline solution (soda lye) while the nitrogen passing through this solution, can be caught in a suitable measuring apparatus and thus determined. The ordinary Doremus apparatus is constructed on principles similar to the Hüfner apparatus; however, for estimating the ammonia coefficient or for any clinical work that is even remotely expected to approach accuracy, the apparatus of Doremus is quite useless.

The ammonia of the urine is, as a rule, determined according to the method of Schloesing; this is not the most accurate method, but it is the simplest and the quickest of execution and generally suffices for clinical purposes. It is based on the following principle: If the urine is treated with lime water most of the ammonia it contains is released from its combinations with other radicles. If the urine containing the lime water is placed under a glass jar with a dish of concentrated sulphuric acid then the liberated ammonia will be caught by the latter and the degree to which the sulphuric acid has been neutralized by the ammonia after 24 or 48 hours, can then be determined by titration. As a rule the direct determination of the ammonia is not performed, but the total so-called ammonia nitrogen of the urine, and this includes the nitrogen bound in substituted ammonia (amino- and amido-, etc., compounds) radicles. This ammonia nitrogen is determined from the difference between the total urinary nitrogen and the urea nitrogen, for the bulk of the nitrogen that is not combined as urea is present in the urine in the form of substituted ammonia compounds.

CUBAN ITCH.

JEFFERSON, Ohio, March 31, 1907.

To the Editor:—There have been local reports of a condition styled "Cuban itch." I have failed to see references to it in Journals. If such a condition exists what are its characteristics? If not, what malady is being confused? W. F. THATCHER.

ANSWER.—After the Spanish-American war in 1898 an epidemic of smallpox of a very mild character prevailed extensively throughout the northern United States. By many, this epidemic was attributed, probably correctly, to the introduction of the disease by returned soldiers from Cuba and the Philippines. In many localities, in consequence of the mildness of the disease, its true character was not recognized, and it was variously styled "Cuban itch," "Philippine measles," etc. While these cases were genuine smallpox it is probable that the same term has been applied to other exanthemata and to other forms of skin disease.

SOLUTION OF CELLULOSE.

OCALA, FLA., March 28, 1907.

To the Editor:—Kindly give formula for ammoniated copper solution, which is used for making a solution of cellulose. Yours very truly, W. H. POWERS, M.D.

ANSWER.—Ammoniated copper solution, or Schweitzer's reagent, was formerly prepared by leaving copper turnings partially immersed in ammonia, with access of air; but it is better made by precipitating copper hydroxid from a cold solution of copper sulphate, by adding an excess of caustic soda. The well-washed precipitate is then dissolved to saturation with ammonia. On treatment with the resultant solution, cellulose becomes gelatinous, and on agitation gradually dissolves, forming a viscid solution, which may be filtered after dilution with water.

TARTARLITHINE.

MEMPHIS, TENN.

To the Editor:—I enclose an "ad" of Tartarlithine from the inside cover of the *Literary Digest*. It speaks for itself. It has been my impression heretofore that McKesson & Robbins conducted an ethical business. Certainly they have advertised Tartarlithine extensively to physicians. LOUIS LEROY.

LOMA LINDA, CAL.

To the Editor:—Can you tell me the composition of Tartarlithine, advertised to the laity by McKesson & Robbins? What is there in it which would check the discharges of postnasal catarrh? GEORGE K. ABBOTT.

ANSWER.—The two letters quoted are specimens of several received on the same subject during the last few months. We have had Tartarlithine examined by two chemists, whose reports indicate that it is an effervescing preparation composed of approximately 20 per cent. of carbonate of lithium and about 80 per cent. of tartaric acid. Thus it is simply another of the hundreds of lithia preparations on the market offered for the cure of rheumatism. This in spite of the fact that scientific investigation and clinical experience have demonstrated that lithia is of very little, if any, use in that disease. While the advertisement carries the idea that Tartarlithine is a product of the Tartarlithine Company and that McKesson & Robbins are simply the selling agents, we are informed that the "business is owned by McKesson & Robbins, who under this style manufacture a remedy for rheumatism." In regard to the information asked for by our correspondents, we would suggest that they write to McKesson & Robbins, who will undoubtedly gladly reply. We would especially suggest to Dr. Abbott that he ask the firm how a mixture of lithia and tartaric acid will "check the discharges of postnasal catarrh?"

THE BIOCHEMICAL JOURNAL.

DENVER, March 30, 1907.

To the Editor:—Please inform me who are the publishers of the *Biochemical Journal* and tell me, if possible, the cost of a single copy. BERNARD OETTINGER, M.D.

ANSWER.—The *Biochemical Journal* is published by the Biochemical Department, Johnston Laboratories, University of Liverpool, England. The American agent is G. E. Stechert, 129 West Twentieth Street, New York City. This is a new journal, only in its second year, and not as yet very widely distributed. The cost of each issue varies with the size of such issue.

The Public Service

Army Changes.

Memorandum of Changes of stations and duties of medical officers, U. S. Army, week ending April 6, 1907:

Borden, Wm. C., surgeon, granted three months' leave of absence to take effect about June 15.

Kilbourne, E. D., asst.-surgeon, relieved from duty at General Hospital, Presidio, San Francisco, and ordered to Fort Brady, Mich.

Talbott, E. M., asst.-surgeon, ordered to proceed from Fort Leavenworth, Kans., to Fort Oglethorpe, Ga., for duty with the Second Squadron, 12th Cavalry, at that post, for duty to accompany command to the Jamestown Ter-Centennial Exposition.

Borden, Wm. C., surgeon, relieved from duty at General Hospital, Washington Barracks, D. C., to take effect on expiration of leave of absence, and will then proceed to Manila, P. I., for duty.

Munson, E. L., surgeon, relieved from duty at General Hospital, Fort Bayard, N. M., and ordered to Fort Sheridan, Ill., for duty.

Rockhill, E. P., asst.-surgeon, relieved from treatment at Army General Hospital, Presidio of San Francisco, and will proceed to General Hospital, Fort Bayard, N. M., for observation and treatment.

Crosby, Wm. D., surgeon, relieved from duty at Vancouver Barracks, Washington, and ordered to the U. S. Soldiers' Home, Washington, D. C., as attending surgeon, and will report about June 14, 1907.

Arthur, Wm. H., surgeon, relieved from duty as attending surgeon U. S. Soldiers' Home, Washington, D. C., and will proceed to Washington Barracks, D. C., and assume command of the General Hospital at that post on June 15.

Moseley, E. B., asst.-surgeon general, granted leave of absence for one month and twenty-five days.

Heard, George P., asst.-surgeon, detailed as a member of the Army retiring board, to meet at Denver, vice Col. E. B., Moseley, asst.-surgeon-general, hereby relieved.

Snyder, C. R., asst.-surgeon, is relieved from duty in the Philippines Division, to take effect at such time as will enable him to comply with order, and will proceed by first available transport sailing from Manila after June 1, 1907, to San Francisco, and on arrival will report by telegraph to the Adjutant General of the Army for further orders.

Sweazey, V. E., asst.-surgeon, will render the necessary attendance at Fort Preble, Me., during the absence of Contract Surgeon Whitney, at Fort McKinley, Me.

Hart, James W., contract surgeon, ordered to accompany troops from Washington Barracks, D. C., to target Camp, Annapolis, Md., and remain on duty at that camp.

Wall, F. M., contract surgeon, granted sick leave of absence for two months.

Tyler, George T., contract surgeon, relieved from duty at Fort Monroe, Va., and ordered to West Point, N. Y., for duty.

Pomeroy, John L., contract surgeon, ordered from New York to Fort Wright, Wash., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. N., for the week ending April 6, 1907:

Jones, E. L., asst.-surgeon, detached Medical School, Washington, D. C., April 3, and ordered to Naval Hospital, Mare Island, Cal., May 20.

Robnett, A. H., asst.-surgeon, detached from Medical School, April 3, to Naval Station, San Juan.

Lee, A. E., asst.-surgeon, to Naval Medical School, Washington, D. C.

Allen, A. H., asst.-surgeon, detached Medical School, April 3, to duty with Marines at Camp Columbia, Cuba.

Kuder, W. S., asst.-surgeon, detached Medical School, April 3, ordered to *Minnesota*.

Haynes, J. P., asst.-surgeon, detached Medical School, April 3, ordered to the *Virginia*.

Ransdell, R. C., asst.-surgeon, detached Medical School, April 3, ordered to the *Maine*.

Ames, M. H., asst.-surgeon detached Medical School, April 3, ordered to the *New Jersey*.

Kaufman, J. B., asst.-surgeon, detached Medical School, ordered to the *Tennessee*.

Smith, H. L., acting asst.-surgeon, detached Medical School, April 3, to Naval Recruiting Station, Omaha, Neb.

Steadman, W. G., acting asst.-surgeon, detached Medical School, April 3, ordered to Naval Recruiting Station, Providence, R. I.

Baker, M. C., acting asst.-surgeon, detached Medical School, April 3, to Navy Yard, Norfolk, Va.

Longabaugh, R. I., acting asst.-surgeon, detached Medical School, April 3, to Annapolis Hospital.

Huff, E. P., acting asst.-surgeon, detached Medical School, April 3, to Proving Grounds, Indian Head, Md.

Donaldson, M., acting asst.-surgeon, detached Medical School, April 3, to Naval Recruiting Party No. 3.

Minter, J. M., asst.-surgeon, from Medical School to Guam Station.

Cohn, I. F., Raison, T. W., Winn, C. K., Downey, J. O., Butts, H., from school to Asiatic Station.

Flint, J., asst.-surgeon, from Medical School to Sanacao Hospital.

Dollard, H. I., acting asst.-surgeon, from school to Newport Hospital.

Odell, H. E., surgeon, from Newport Hospital, to Naval Hospital, Washington, D. C., and to duty on course of instruction at the U. S. Naval Medical School.

Garton, W. M., surgeon, detached from Naval Hospital, Washington, D. C., ordered home, 2 weeks' leave, thence to *Ohio*.

Moore, J. M., surgeon, detached Norfolk Hospital, to Naval Recruiting Station, Minneapolis, Minn.

Plummer, R. W., P. A. surgeon, detached Naval Recruiting Station, Chicago, Ill., to duty on course of instruction at the U. S. Naval Medical School, Washington, D. C.

Baker, M. W., P. A. surgeon, detached Naval Hospital, New York, to Naval Hospital, Portsmouth, N. H.

Freeman, G. F., P. A. surgeon, detached Naval Hospital, Portsmouth, N. H.; to duty in attendance on course of instruction at the U. S. Naval Medical School, Washington, D. C.

McLean, N. T., asst.-surgeon, detached from Navy Yard, Boston, Mass., to Naval Recruiting Station, Chicago.

Miller, J. T., acting asst.-surgeon, detached from Naval Recruiting Station, Minneapolis, Minn., to course of instruction at Naval Medical School, Washington, D. C.

Balch, A. W., P. A. surgeon, detached Naval Medical School, Washington, D. C., April 5, ordered to Naval Hospital, Cavite, P. I., sailing from New York, N. Y., April 20, stopping en route at London, England; Hamburg, Germany, and other points for special duty.

Tolfree, H. M., P. A. surgeon, detached from the *Connecticut* to the *Dolphin*.

McDonnold, P. E., asst.-surgeon, detached *Dolphin*, to the *Connecticut*.

Baker, M. W., P. A. surgeon, detached Naval Hospital, New York, N. Y., to Naval Hospital, Boston.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended April 3, 1906:

Brooks, S. D., surgeon, relieved from duty at San Diego, Cal., and directed to proceed to Los Angeles, and to assume charge of the service at that port, relieving Surgeon J. O. Cobb.

Cobb, J. O., surgeon, relieved from duty at Los Angeles, and directed to proceed to Cairo, Ill., and to assume command of the service at that port, relieving Surgeon G. M. Guiteras.

Guiteras, G. M., surgeon, relieved from duty at Cairo, Ill., and directed to proceed to Mobile, Ala., and to assume command of the service at that port, relieving P. A. Surgeon Edward Francis.

von Ezdorf, R. H., P. A. surgeon, assumed command of New Orleans Quarantine Station, April 1, 1907.

Fox, Carroll, P. A. surgeon, leave of absence granted Dec. 28, 1906, for 14 days, revoked.

Francis, Edward, P. A. surgeon, relieved from duty at the Marine-Hospital, Mobile, Ala., and directed to assume command of the Quarantine Service at that port, April 1, 1907.

Robertson, E. McG., Asst.-surgeon, relieved from duty at Philadelphia, and directed to proceed to Reedy Island Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

Salmon, T. W., asst.-surgeon, granted leave of absence for 4 days on account of sickness from March 23, 1907.

de Valin, Hugh, asst.-surgeon, relieved from duty at Reedy Island Quarantine Station, and directed to proceed to New Orleans Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for 10 days from March 27, 1907.

McCormac, J. T., acting-asst.-surgeon, granted leave of absence for 30 days, on account of sickness, from Feb. 9, 1907.

McConnell, E. F., acting asst.-surgeon, department letter of Feb. 26, 1907, amended so as to grant acting asst.-surgeon McConnell 22 days' leave of absence from Feb. 25, 1907, instead of 30 days.

Safford, M. V., acting asst.-surgeon, directed to proceed from Boston to Westborough, Mass., for special temporary duty, on completion of which to rejoin his station.

Story, H. C., acting asst.-surgeon, granted leave of absence for 30 days from May 1, 1907.

BOARDS CONVENED.

A board of medical officers was convened to meet at Philadelphia, April 4, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon J. M. Gassaway, chairman; P. A. Surgeon T. Clark, recorder.

A board of medical officers was convened to meet at Wilmington, N. C., April 8, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon C. H. Lavinder, chairman.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended April 5, 1907:

SMALLPOX—UNITED STATES.

California: San Francisco, March 16-23, 2 cases.
Florida: Duval County, Jacksonville, March 23-30, 1 case; Hillsboro County, 6 cases; Polk County, 4 cases; Suwanee County, 1 case.
Georgia: Augusta, March 26-April 2, 6 cases.
Illinois: Chicago, March 23-30, 2 cases; Galesburg, 3 cases.
Indiana: Indianapolis, March 24-31, 3 cases; Marion, March 1-31, 11 cases.
Iowa: Clinton, March 16-23, 2 cases.
Kansas: Kansas City, March 23-30, 1 case.
Louisiana: New Orleans, March 23-20, 15 cases, 1 death.
Massachusetts: Boston, March 23-30, 1 case.
Michigan: Detroit, March 2-9, 11 cases.
Mississippi: Gulfport, March 18-25, 1 case (1 imported).
Missouri: St. Joseph, March 2-9, 23 cases, 1 death; St. Louis, March 23-30, 2 cases.
New Jersey: Hoboken, March 23-30, 1 case; Newark, 2 cases.
North Carolina: Charlotte, March 23-30, 1 case.
Ohio: Cleveland, March 22-29, 1 case.
Texas: Houston, Feb. 3-March 30, 76 cases.
Washington: Seattle, March 17-24, 1 case; Spokane, March 16-23, 18 cases.

SMALLPOX—FOREIGN.

Canada: Nova Scotia, Colchester County, March 25, present; Pictou County, present; British Columbia: Vancouver, March 16-23, 1 case; Manitoba: Winnipeg, March 16-23, 1 case.
China: Hongkong, Feb. 2-16, 27 cases, 26 deaths; Shanghai, Feb. 9-23, 5 deaths.
Ecuador: Guayaquil, March 2-16, 8 deaths.
France: Dunkirk, Feb. 6-March 8, 12 cases, 5 deaths (imported); Marseilles, March 6-13, still present; Paris, March 9-16, 12 cases, 2 deaths.
Germany: Bremen, March 9-16, 3 cases; Metz and vicinity, March 3-16, 33 cases.
Great Britain: Manchester, March 9-16, 2 cases.
India: Bombay, Feb. 27-March 5, 3 deaths; Calcutta, Feb. 16-23, 48 deaths; Madras, Feb. 23-March 1, 1 death.
Italy: Turin, March 2-9, 1 case.
Mexico: Aguas Calientes, March 16-23, 3 deaths; Mexico, Mexico, Feb. 16-March 2, 29 deaths.
Portugal: Lisbon, March 9-16, 12 cases.
Russia: Odessa, March 2-9, 32 cases, 6 deaths; Riga, May 9-16, 6 cases; St. Petersburg, Feb. 23-March 9, 3 cases, 3 deaths; Warsaw, Feb. 9-16, 4 deaths.

YELLOW FEVER.

Africa: Dahomey, Grand Popo, Jan. 15, present.
Brazil: Para, March 2-9, 4 cases, 2 deaths.
Ecuador: Guayaquil, March 2-16, 21 deaths.
Mexico: Vera Cruz, Paraje Nuevo, March 2-9, 1 case, 1 death.

CHOLERA.

India: Calcutta, Feb. 16-23, 42 cases; Madras, March 1, 3 deaths; Rangoon, Feb. 16-23, 4 deaths.

PLAGUE.

Hawaii: Honolulu, March 2-9, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, Feb. 8-16, 1 case, 1 death; Niuchwang, Feb. 6, 2 deaths.
Egypt: Assiout Province, March 1-7, 16 cases, 7 deaths; Girgeh Province, March 1-7, 46 cases, 34 deaths; Ismalia, March 4, 1 case, 1 death; Keneh Province, March 2-7, 23 cases, 16 deaths.
India: General, Feb. 16-23, 29,253 cases, 24,242 deaths; Bombay, Feb. 27-March 5, 306 deaths; Calcutta, Feb. 16-23, 27 deaths; Rangoon, Feb 16-23, 55 deaths.

Marriages

SAMUEL STEINER, M.D., to Miss Rebecca E. Killian, both of Philadelphia, March 24.

WILLIAM JOHN MALOY, M.D., to Miss May Hanley, both of Muncie, Ind., recently.

ROBERT M. MILLER, M.D., to Miss Lena Jenks, both of Bogard, Mo., March 20.

FREDERIC KAMMERER, M.D., to Miss Ida Knapp, both of New York City, March 23.

ROBERT C. BRADLEY, M.D., to Miss Charlotte Marie Perkins, both of Peoria, Ill., March 30.

LEANDER HOWARD SHEARER, M.D., to Miss Grace T. Parker, both of New York City, April 6.

JAMES ROBERTSON DAWSON, M.D., to Miss Theresa Mushat, both of Birmingham, Ala., April 3.

EDWARD GILLETTE MARTIN, M.D., Detroit, Mich., to Miss Helen Marian Fraser of Petrolea, Ont., March 27.

Deaths

Frank Swartzlander, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1863; in 1862 anatomist of the Military Hospital, Philadelphia, where he made all the postmortem examinations until his graduation a year later; in March, 1863, appointed assistant surgeon of the Seventy-fourth Pennsylvania Volunteer Infantry; chief surgeon of the field hospital of the Third Division, Eleventh Army Corps, at the battle of Gettysburg; later assistant surgeon of volunteers and in charge of the auxiliary military hospital at Savannah, Ga.; dean of the medical profession of Doylestown, Pa.; a member of the state and county medical societies, died suddenly at his home, March 31, from acute gastritis, aged 65.

Joseph Gilbert Bemis, M.D. College of Physicians and Surgeons in the City of New York, 1865; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; a member of the American Medical Association; assistant surgeon of the First Minnesota Volunteer Infantry during the Civil War; a practitioner of Chicago for 24 years, died at his home in that city, April 1, from tuberculosis, after an illness of four months, aged 62.

William Henry Drummond, M.D. University of Bishop College, Faculty of Medicine, Montreal, 1884; famous for his poems on the French-Canadian habitants; professor of medical jurisprudence at Bishop College and a prominent practitioner of Montreal, died in Cobalt, Ont., where he was manager of the Drummond mine, from cerebral hemorrhage, April 6, after an illness of five days, aged 51.

William Oglesby Sweeney, M.D. Bellevue Hospital Medical College, New York City, 1864; one of the oldest and most prominent practitioners of Lexington, Ky., and for a number of years instructor in chemistry at Hocker College; who retired from practice 20 years ago on account of blindness, died at his home in Lexington, March 27, after a prolonged illness, aged 66.

Lewis L. Pollock, M.D. University of Maryland School of Medicine, Baltimore, 1856; a surgeon in the Confederate service during the Civil War; thereafter a practitioner in Boston, and for the last 18 years a resident of East Weymouth, Mass., died in Bellevue Hospital, New York City, March 25, from gastritis, after an illness of one week, aged 70.

Alfred George Mays, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1878; for 25 years a prominent practitioner of Leadville, Red Cliff and Victor, Colo., who moved to Nevada City, Cal., on account of his health last year, died in that city from cerebral hemorrhage, March 3, after an illness of two days, aged 55.

Nicholas Lafayette Campbell, M.D. College of Physicians and Surgeons in the City of New York, 1845; one of the founders of the New York Academy of Medicine in 1847; a veteran medical officer of the Mexican and Civil wars; since his retirement a clerk in the health department of New York City, died in that city, March 29, aged 84.

George Warren Bartow, M.D. College of Physicians and Surgeons in the City of New York, 1873; a member of the American Medical Association and a veteran of the Civil War, during which he served in the Fifteenth New Jersey Volunteer Infantry, died at his home in Three Bridges, N. J., March 28, from paralysis, aged 63.

William J. Wroth, M.D. University of Maryland School of Medicine, Baltimore, 1852; for a number of years resident physician of the Marine Hospital, Baltimore, and founder of the Rush Medical Club at the University of Maryland, died at his home in Baltimore, April 3, from intestinal obstruction, after a short illness, aged 77.

Clarence Edward Avery Buckley, M.D. Halifax Medical College, Medical Faculty of Dalhousie University, Halifax, N. S., 1904; formerly interne at the Victoria General Hospital, and then a practitioner at Thorburn, died at the residence of his father in Halifax, March 27, from tuberculosis, after a prolonged illness, aged 24.

Thomas Wight, M.D. College of Physicians and Surgeons in the City of New York, 1864; a member of the state and county medical societies, and one of the oldest practicing physicians of Delaware County, N. Y., died at his home in Andes, March 31, from injuries sustained in a runaway accident three days before, aged 73.

Allen Castle Simonton, M.D. Northwestern University Medical School, Chicago, 1865; a veteran of the Civil War; a resident of Washington since 1870, and for several years chief surgeon of the Great Northern System, died at his home in Seattle, March 26, from heart disease, after an illness of two years, aged 60.

Young A. Matthews, M.D. Shelby Medical College, Nashville, Tenn., 1859; president of the Cass County (Texas) Medical Society; who served throughout the Civil War as surgeon of the Eighteenth Texas Infantry, C. S. A., died at his home in Atlanta, Texas, Nov. 20, 1906, from heart disease, aged 69.

Samuel R. Richardson, M.D. Medical Department, Victoria College, Toronto, 1871; coroner of York County, Ontario, for several years, and for more than 30 years a practitioner of Eglinton, died in North Toronto, March 26, from pneumonia complicating typhoid fever, after a long illness, aged 64.

Robert Stuart MacGregor, M.D. New York University Medical College, 1897; a member of the state and county medical societies, and a member of the staff of St. Bartholomew's Clinic and of the New York Polyclinic, died at his home in New York City, March 23, from pneumonia, aged 38.

George W. Pettit, M.D. Cleveland Medical College, Medical Department of Western Reserve Medical College, 1853; said to have been the oldest practitioner of Mahoning County, Ohio, died at his home in Petersburg, March 8, from concussion of the brain, due to a fall four days before, aged 79.

Guido Spitzy, M.D. Faculty of Medicine, Paris, France, 1870; who saw service under the English government in Egypt and India, but for the last three years and a half has been in practice at Los Banos, Cal., died at his home, March 15, from tuberculosis, after a prolonged illness, aged 60.

Harry E. Burdett, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1886; for 20 years a practitioner of St. Paul, Minn., died in a hospital in that city, March 27, from heart disease, after an illness of several weeks, aged 45.

Mitchell Starr, M.D. Starling Medical College, Columbus, Ohio, 1863; assistant surgeon of the Seventy-fourth Ohio Volunteer Infantry throughout the Civil War and one of the oldest practitioners of Van Wert County, Ohio, died at his home in Shenandoah, March 27, aged 86.

John B. Callan, M.D. Chattanooga (Tenn.) Medical College, Medical Department of Grant University, 1905; a promising young physician of De Kalb County; formerly a practitioner of Bridgeport, Jackson County, Tenn., died in New Mexico, from tuberculosis, March 23.

Robert Colman Arnette, M.D. Louisville (Ky.) Medical College, 1873; a veteran of the Civil War in the Confederate service, and a practitioner of Monticello, S. C., died at the residence of his brother-in-law, near Ridgewood, S. C., March 20, from nephritis, aged 59.

George W. Matthews, M.D. Medical Department of the University of Louisiana, New Orleans, 1872; a veteran of the Mexican War, and a member of the Texas legislature in 1875, died at his home in Garden Valley, Texas, March 28, from influenza, aged 80.

Charles F. Reilly, M.D. College of Physicians and Surgeons, Baltimore, 1902; of Woonsocket, R. I.; school committeeman of the town of Blackstone, R. I., died at the home of his parents in that city, March 31, after an illness of several weeks, aged 34.

Florentine O. Reeve, M.D. Cleveland University of Medicine and Surgery, 1894; for some time a professor in his alma mater, and superintendent of schools of Brooklyn, Ohio, died at his home in Cleveland, March 29, from pneumonia, aged 55.

James E. O'Malley, M.D. New York University Medical College, 1888; a member of the staff of St. Luke's Hospital, Newburgh, N. Y., died at his home in that city, after a long illness, consequent on a fall several years ago, March 27, aged 46.

John W. Stoner, M.D. Cleveland University of Medicine and Surgery, 1888; secretary of the board of education and board of health of North Baltimore, Ohio, died in a hospital in Cleveland after an operation for cancer, March 22, aged 47.

Frances Van Cleve Fuller, M.D. Woman's Medical College of the New York Infirmary, New York City, 1884; a retired practitioner of Brooklyn, died at her residence in that city, March 27, from pneumonia, after a short illness, aged 56.

D. David Fisher, M.D. University of Vermont College of Medicine, Burlington, 1883; for the last eight years justice of the peace, died at his home in Kersey, Pa., March 24, from heart disease, after an illness of two weeks, aged 50.

James Fletcher Winsell, M.D. Ohio Medical College, Cincinnati; who had retired from practice more than 25 years ago, died in Redding, Cal., Nov. 9, 1906, from paralysis, after an illness of five days, aged 81.

John W. Culley, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1873; died at his home in Salt Lake City, Utah, March 21, from pneumonia, after a short illness, aged 67.

William McCallum, M.D. College of Physicians and Surgeons of Chicago, 1886; for many years a practitioner of Gladstone, Mich., died at the Northwestern Hospital, Minneapolis, Minn., March 28, aged 52.

Berry Meek, M.D. St. Louis Medical College, 1857; a pioneer physician of Holt County, Mo., died at State Hospital No. 2, St. Joseph, where he had been an inmate for nearly ten years, March 27, aged 80.

Lawrence F. Berry, M.D. Jefferson Medical College, Philadelphia, 1905; an interne at the Philadelphia Hospital, died at that institution from erysipelas, March 29, after an illness of five days, aged 25.

Samuel D. Bickel, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1895; at one time warden of the Atlantic County prison, died at his home in Atlantic City, N. J., March 26.

Robert Fuller Eubank, M.D. Baltimore Medical College, 1896; of Ottoman, Lancaster County, Va.; a member of the state and county medical societies, died March 26, after a brief illness, aged 42.

William H. Dwight, M.D. College of Medicine, Syracuse (N. Y.) University, 1876; cashier of the State Bank of Goddard, Kan., was found dead from gunshot wound, a mile east of Goddard, April 3.

John Mattauer Winfree, M.D. Medical College of Virginia, Richmond, 1889; of Richmond, Va., died at the home of his father-in-law, in Raleigh, N. C., March 31, after an illness of two years.

Ethelda M. Teeters Widemann, M.D. University of Wooster, Medical Department, Cleveland, 1895; died at her home in Cleveland, Ohio, from septicemia, after an illness of one week, aged 35.

William R. Stout, M.D. Kentucky School of Medicine, Louisville, 1881; formerly a practitioner of Covington, Ind., died at his home near North Vernon, Ind., March 15, after a prolonged illness.

George G. Ware, M.D. Jefferson Medical College Philadelphia, 1857; died at his home in Stanton, Tenn., March 25, from injuries received in a runaway accident several days before.

Francis E. Watts, M.D. Hahnemann Medical College and Hospital, Chicago, 1883; died at his home in Olean, N. Y., March 27, from hemorrhage of the lungs, after a short illness, aged 47.

Ernest S. Empey, M.D. College of Medicine of the University of Nebraska, Omaha, 1905; formerly of Torrington, Wyo., died at his home in Scott's Bluff, Neb., January 28, from tuberculosis.

George H. Duncan, M.D. McGill University Medical Faculty, Montreal, 1892; for some time a practitioner of the Yukon, died at his home in Victoria, B. C., Dec. 2, 1906, aged 44.

Louis N. Hilleary, M.D. New York University Medical College, New York City, 1880; formerly a practitioner of Burlington, Iowa, died at his home in Poway, Cal., aged 54.

Lewis U. Singer, M.D. Jefferson Medical College, Philadelphia, 1881; one of the first settlers of Clearfield, Iowa, died at his home in that place, from pneumonia, March 25.

Joseph **N. Knight, M.D.** Boston University School of Medicine, 1883; died at his home in Cliftondale, Mass., March 30, from tuberculosis, after an illness of a year, aged 45.

James **S. Sullivan, M.D.** Medical School of Harvard University, Boston, 1894; died at his home in Randolph, Mass., March 23, from pneumonia, after a brief illness, aged 41.

Henry **B. Evarts, M.D.** Eclectic Medical Institute, Cincinnati, 1871; died at his home in Grand Rapids, Mich., March 31, after an illness of two days, aged 61.

Floyd **Clendenen, M.D.** Bennett College of Eclectic Medicine and Surgery, Chicago, 1874; died at his home in La Salle, Ill., April 4, from pneumonia, aged 69.

John **MacDonald, M.D.** Jefferson Medical College, Philadelphia, 1879; died at his home in Chatham, N. B., Dec. 12, 1906, after a long illness, aged 55.

John **Munro Campbell, M.D.** McGill University Medical Faculty, Montreal, 1869; died at his home in Greenpoint, Brooklyn, N. Y., April 2, aged 70.

Joel **Y. Lynch, M.D.** Indiana Eclectic Medical College, Indianapolis, 1887; died at his home in Rosedale, Ind., April 2, after a long illness, aged 55.

Thomas **A. Skillman, M.D.** New York University Medical College, New York City, 1878; died at his home in New Brunswick, N. J., aged 53.

Warren **F. Barksdale, M.D.** University of Louisville, Medical Department, 1855; died at the home of his daughter in Hardy, Miss., March 9, aged 77.

Frank **Riley, M.D.** St. Joseph (Mo.) Medical College, 1882; died suddenly at his home in St. Joseph, April 1, from cerebral hemorrhage, aged 48.

Jasper **N. Taylor, M.D.** Vanderbilt University, Medical Department, Nashville, Tenn., 1871; died at his home in Lynchburg, Tenn., March 27.

Belton **O. Bennett, M.D.** Medical College of the State of South Carolina, Charleston, 1876; died at his home in Greer's, S. C., January 17.

John **Batemen Deere, M.D.** Memphis Hospital Medical College, 1898; of Sandy Springs, Ark., died in Little Rock recently, aged 39.

Robert **Farries, M.D.** Long Island College Hospital, Brooklyn, 1865; died at his home in New York City, March 31, aged 72.

William **E. Pillsbury, M.D.** Dartmouth Medical School, Hanover, 1873; died at his home in Milton Mills, N. H., February 10.

G. **A. L. Payne, M.D.** McGill University Medical Faculty, Montreal, 1906; died at Montreal in January, from typhoid fever.

William **C. Christian, M.D.** St. Louis Medical College, 1865; died recently at his home in New Bloomfield, Mo., aged 76.

Samuel **Clarke, M.D.** Jefferson Medical College, Philadelphia, 1899; died at his home in Philadelphia, March 29.

Deaths Abroad.

F. J. **Herrgott, M.D.**, professor of obstetrics at Nancy since 1872, died March 5, aged 93. Besides his numerous publications on gynecologic, obstetric and surgical subjects, he wrote a history of obstetrics, translating Siebold's work and bringing the history down to date. In his eighty-third year he published a translation of the celebrated treatise on diseases of women by Soranus of Ephesus. Herrgott also published a work entitled "The Chamberlin Family and the Discovery of the Forceps." He is said to have been the first physician who systematically made a practice of watching over the health of infants born in his service, giving each mother a louis (84) out of his own pocket when she had raised a healthy infant, following his directions.

A. **von Weismayr, M.D.**, first director of the great Alland sanatorium in Austria, but for the last few years chief of a Vienna hospital, one of the collaborators on the *Wien. klin. Rundschau*, died March 12, aged about 40. He was the first medical man in Austria to devote his efforts and research exclusively to the question of tuberculosis, and his popular pamphlet, "The Essence of Tuberculosis," has been distributed by thousands. He succumbed a victim to the disease to which he had devoted his life. An article from his pen on the prognosis of tubercuiosis is still appearing in serial form in the *Rundschau*.

A. **Petraglia, M.D.**, dean of the physicians at Rome, Italy, died March 10, aged 91.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, CONTRACT PRACTICE, INSURANCE FEES, MEDICAL LEGISLATION, ETC.

A Move in the Right Direction.

A bill of more than ordinary importance has been introduced into the General Assembly of the state of New York by Mr. Merritt. It is entitled, "An act to provide for holding a convention within the state of New York of delegates to be appointed by the governors of the several states for the purpose of devising and recommending to the legislatures thereof uniform laws, and making an appropriation therefor." The bill, which is a short one, authorizes the governor of the state of New York to appoint three delegates and to invite the governor of each other state in the union to do the same. These delegates are to meet during the coming October at some place in the state of New York and are to consider and recommend to their respective legislatures the enactment of uniform laws in the matter of life and fire insurance, divorce, labor, public utilities, etc. The expense of holding this convention and also the actual traveling expenses of the various delegates will be paid by the state of New York, and the bill calls for an appropriation for this purpose.

It is to be hoped that this bill will become a law and that the convention provided for therein may be held. Among the subjects that may well be considered by the convention is the examination and licensing of physicians and the regulation of the practice of medicine. Under the federal Constitution such matters as those enumerated in the bill come under the head of functions not surrendered by the states to the general government. Consequently, they are under the jurisdiction of the states. There is not only no reason why every effort should not be made to obtain uniformity of legislation along these lines in the various states, but there is every reason why an enlightened and intelligent civilization should demand uniform legislation on these subjects based on rational investigation and sound economic principles. From the standpoint of our profession, it may be said that uniformity in laws regulating the practice of medicine is the most effective means of bringing about reciprocity. For this reason it is to be hoped that, should such a convention materialize, the governors of the various states will see fit to appoint as one of the three delegates from each state a progressive member of the medical profession. There is no state that can take the lead in such a matter with a better grace or more authority than the Empire State. It is to be hoped that this bill will lead to definite and tangible results.

The Weak Points in Organization.

Dr. W. P. Whery, Fort Wayne, Ind., writes:

"The medical profession in the United States seems now to be very well organized. Physicians are grouped in county, district, state and national associations, the chief difference between these being that a wider and wider circle is necessary to circumscribe them in the order named. Practically the work of every group is identical. Papers are read and discussed and much useful postgraduate instruction is afforded. To a small extent, the social or fraternal feature is cultivated; but the highly important subject of economics—the legislative business interests especially—is neglected or attended to in such a perfunctory manner that injury instead of benefit results. We do not find the collateral profession of lawyers making a similar mistake.

"The weak point of the organization of medicine is the state society. There is no good reason why it should be a mere *fac simile* of the county society enlarged. Under the constitution of the United States the whole legislative regulation of the profession belongs to the several states. This is a reason why the state society in its public sessions should give most of its time to the business interests of its members, and reduce the time devoted to scientific matters, as these are fully taken care of in the county, district and national associations. If the state society would include in its program orations on the

subjects of the sections into which the American Medical Association's work is divided, the rest of the time might be devoted to medical economics. The laws that concern the profession are generally promoted by a small number of persons, and the practitioners affected by them have no opportunity to express any opinion on legislative projects that may be injurious. After all, the bulk of the medical societies consists of general practitioners, with whose business interests the specialists who are prominent at the meetings have no sympathy. Contract work, insurance work, public services and the collection of fees for attendance on private patients are matters deserving much attention at the meetings of the state societies. Instead of being relegated to committees, these things should form a main part of the work of the general sessions. If this change were adopted very few practitioners in a state would be found outside of the state association of the school to which they belong."

Public Meetings by County Societies.

The advantages to be gained by county societies holding occasional public meetings is interestingly discussed by Dr. J. M. Allen, of Liberty, Mo., in a recent number of the *Journal of the Missouri State Medical Association*. As a means of securing favorable legislation and appropriations for sanitary purposes such meetings would prove invaluable, and Dr. Allen recommends that at least one such meeting should be held annually. He also emphasizes the importance of the education of public school teachers on matters of sanitation and hygiene and suggests the appointment, in each county, of a member of the county society to deliver to the school teachers, at their county institutes, addresses on public school hygiene and other matters along medical lines. This last suggestion is practical as well as valuable and there is no reason why it can not be carried out in every county in which medical organization exists. Every teachers' institute and organization would gladly welcome such an arrangement. The influence for good which would thus be exerted both on the teachers and their pupils can not be over estimated.

Reasonable Fees for Insurance Examination.

The position of the profession on the life-insurance examination question was recently the subject of editorial comment in the *Interview*, a paper published in New York. The writer says, in part:

"Physicians have begun war on the old line life insurance companies, resisting the proposed cut of medical examination fees from $5 to $3. In view of the extremely high cost of even moderate living nowadays, and in view of the fact that doctors, who are properly fitted for their profession, have had to spend much cash and long years of laborious study, we fully believe that they are perfectly justified in demanding a reasonable fee for making thorough examination of applicants for life insurance, and we do not believe that $5, on an average, is any too much compensation for a skilled physician for the time required to make a trustworthy examination."

What Is Contract Practice?

A correspondent writes: "What is the meaning of the words 'contract practice' as used in paragraph 4 of 'Why You Should Join a County Medical Society'?" The paragraph referred to reads: "Because it makes possible among physicians better business conditions and methods, including fee bills, defense and avoidance of contract practice, etc." As these matters lie within the jurisdiction of the county society, the construction placed on the terms used therein also lies within the same province. Each county society has a right to decide for itself what constitutes contract practice. In a country as large as ours, with interests so varied and local conditions so diversified, a definition, at once inclusive and exclusive, is difficult, if not impossible. The objectionable features of contract practice are the payment of a definite amount of compensation for an indefinite amount of service; the payment, for services rendered during the life of the contract, of an amount far below that which would be received for the same services if they were paid for in detail; and the competition engendered between physicians, which leads them to underbid each other, thus causing dissensions, etc.

Medical Societies in St. Louis Cooperate.

Representatives of the medical societies of St. Louis have organized "the Joint Medical Council" for the purpose of improving the management of the city hospitals and dispensaries. At present, the health commissioner and the superintendents of the various public benevolent institutions in the city are appointed by the mayor. The council has recommended the organization of a board of trustees, to be chosen at municipal elections and to consist of six members, beside the mayor as an *ex-officio* member, this board to have control of the city hospitals and associated dispensaries, as well as of all of the public charitable institutions now in the city or that may be established in the future. It further recommends that this board of trustees appoint, from the physicians of the city of St. Louis, a representative medical staff, which shall have charge of the medical and surgical work in the public institutions.

The Council is composed of 21 representatives from the following societies: St. Louis Medical Society, Medical Society of City Hospital Alumni, St. Louis Homeopathic Medical Society, St. Louis Hahnemannian Club, St. Louis Children's Hospital Alumni Association, St. Louis Eclectic Medical Society, St. Louis Dental Society, St. Louis Surgical Society, St. Louis Surgical Club, St. Louis Obstetrical and Gynecological Society, and the Veren Deutscher Aerzte.

Legislation Notes.

Dr. G. N. Streeter, Brooklyn, N. Y., writes regarding the passage of the medical practice act in Delaware:

"Why can not such legislation be brought about in every state, and thus banish the Christian science healers, osteopaths and others who have not complied with the arduous and expensive requirements exacted of members of the medical profession? Why should we be discriminated against in this manner by the different states? Will the apathy of doctors continue until our profession is thrown from the place to which it is entitled in the communinty by those who play on the delusions and credulity of the gullible public? Why can not the American Medical Association, at its next meeting, appropriate money and appoint committees to bring this matter before the legislatures of the different states and also discuss the matter in each publication of THE JOURNAL?"

Dr. L. R. Markley, Bellingham, Wash., writes regarding the work of the legislature in that state:

"Our state legislature has just adjourned and, as usual, the wants of the profession were not given as much consideration as we had hoped for. The coroners' bill was defeated. The watershed bill was also killed; this was a meritorious measure designed to give better control of the water supply. The tuberculosis bill and all medical practice bills were also killed. We succeeded in getting a fairly good pure milk and pure food bill passed, also a bill relating to vital statistics. It seems strange that we have to work so hard to get bills that are solely for the public good adopted by the state legislature. At every turn 'private interests' are butting in and, as they have money to spend, they usually win, until public interest is sufficiently aroused to compel attention."

Dr. B. D. Black, secretary of the New Mexico Board of Health, reports the passage by the legislature of house bill No. 53, which regulates the practice of medicine and provides for a medical examining board. Dr. Black says: "It is a compromise bill and is not what we asked for or expected, but it is such a material improvement over our old law that we feel that we can congratulate ourselves."

Pottawatomie County (Okla.) Medical Society reports a membership for 1906 of 32. During the year it held 57 meetings, with an average attendance of 15. The society is now meeting every Saturday night. If such work can be done in one of our new western states, what might not be possible in the older and more settled portions of the country, where it is much easier for physicians to attend and to support a medical society?

Book Notices

DISEASES OF THE NERVOUS SYSTEM, Resulting from Accident and Injury. By P. Bailey, A.M., M.D., Clinical Lecturer in Neurology, Columbia University, New York City, etc. Cloth. Pp. 627. Price, $5.00. New York: D. Appleton & Co., 1906.

The tendency to see a causal relationship between two events merely because one follows the other in point of time seems to be deeply rooted in the human mind. This applies not only to the ordinary phenomena of Nature, but also particularly to matters relating to medicine. Were such faulty deductions limited to the laity the profession might easily overlook it, at least so far as medical matters are concerned, but unfortunately the same weakness is but too prevalent among physicians. In no particular is this so manifest as it is in the tendency shown by some to attribute to some antecedent injury all of the subsequent ills which may befall an individual. Owing to the great lack of knowledge, on the part of many physicians, of the anatomy, physiology and pathology of the nervous system, the relationship which exists between injury and nervous diseases, is but little understood. The appearance of this work, therefore, by one of such wide experience, is very timely.

The volume is divided into three parts: 1, On "Organic Effects of Injury to the Nervous System;" 2, on "Functional Effects of Injury," and 3, on "Medicolegal Considerations." There is an introductory chapter on the general methods of examination for the actual injury, which is good and should be carefully studied. Then follow chapters on actual injuries to the various parts of the nervous system, particular attention being given to the prognosis of such injuries. Almost half of the volume is devoted to the "Functional Effects of Injuries," which indicates how frequent and important is this class of disorders. In this connection we make the following quotation which is, alas, but too true: "The influence of suggestion by physicians is frequently traceable in the causation of traumatic neurasthenia and of traumatic hysteria. In many cases it seems as though these disorders owe their appearance, in a large part at least, to the fact that the patients have been told by physicians that they may some day have trouble with the spinal cord as a result of the accident. The examples of the bad effects of such ill-advised statements are numerous."

The chapters on "Personal Injury Claims," "Expert Witnesses," "Malingering," "Substitution of Origin," "Simulation," etc., are extremely interesting and instructive. The great prevalence of personal injury suits of all kinds against corporations and individuals; the tendency toward industrial insurance and the enactment of more rigid indemnity laws, make it incumbent on every physician to become more thoroughly informed on the subject of injuries and their results. Therefore, this work can be most heartily recommended.

A TREATISE ON SURGERY. By G. R. Fowler, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York, etc. 888 Illustrations and 4 Colored Plates, all original. Cloth. Pp. 722. Price, $15.00 net. Philadelphia: W. B. Saunders Co., 1906.

A glance at the table of contents of this book shows that an ambitious effort has been made to cover the entire field of surgery, the design being encyclopedic and the work in its entirety constituting a memorial to the ability, skill and industry of the lamented Fowler, whose individuality is clearly stamped on its pages. In a work of such broad scope, undertaken by a single author, it is to be expected that some shortcomings will be found and it is to be regretted that a second edition will not have the benefit of revision by its distinguished author. More than one-half (428 pages) of the first volume is devoted to the principles of surgery and minor surgery. The descriptions of disease processes are, on the whole, fairly accurate, but some noteworthy contradictions are met in this connection. The book opens with the subject of inflammation which, from the viewpoint of the surgeon he very properly defines as "that series of changes in the tissues which take place as the result of injury, plus infection." Later we find aseptic wound healing described as "regenerative inflammation," a manifest misnomer according to the preceding definition. Again, the statement: "Fever is an increased tissue metamorphosis, the essential result of pathogenic bacteria. This influence may be exerted directly by the presence of the micro-organisms themselves, or indirectly by the products of decomposition and the presence of ptomains," will hardly meet the requirements of modern surgical pathology and is flatly opposed on the next page by the remarks on aseptic wound fever and experimental fever resulting from intravenous infusion of salt and other solutions. The section on laboratory aids in surgical diagnosis and prognosis is clear, full and practical, as are also those on anesthesia and bandaging. We note in the section devoted to operative technic, otherwise well written and of direct practical value that the circular method of amputation is favorably described and that, in the flap operation, preference is given to transfixion over incision. The old-fashioned method of draining through the suture line is recommended instead of the modern plan of establishing drainage through a puncture in the most dependent portion of the stump. The remaining portion of the two bulky volumes, devoted to regional surgery, is well arranged for reference, beautifully illustrated, thoroughly indexed and though dealing but briefly with many subjects, is in general a reliable guide to the modern practice of surgery.

MANUAL OF PRESCRIPTION WRITING, with a Full Explanation of the Methods of Correctly Writing Prescriptions. By Matthew D. Mann, A.M., M.D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo. Revised by E. Cox Mann, M.D. Sixth Edition, Revised and Enlarged. Cloth. Pp. 232. Price, $1.00. New York and London: G. P. Putnam's Sons, 1907.

This little manual covers a range of subjects important to the practical physician, and it aims to supplement current medical teaching in some of the details in which it is admittedly deficient. The ordinary course is followed, the parts of a prescription, the weights and measures commonly used, the language and abbreviations and grammatical construction being described with some detail. The different classes of preparations, with examples of prescriptions for powders, pills, mixtures, liniments, and the various forms of medicine intended for external use are then described. A discussion of doses, the metric system, the combination of medicines and incompatibilities completes the work. The utility of the work is unquestioned, and it will repay careful study by any one who appreciates the need of elegance and accuracy in the important matter of prescription writing. The book has been revised to accord with the latest revision of the Pharmacopeia, but we regret to note that this revision has overlooked some verbal errors which are unfortunate in a work intended to teach verbal and grammatical accuracy. Pepsinæ for pepsini and glycerinæ for glycerini occur, as well as oleum theobromæ for oleum theobromatis. These errors, which are of importance in a work like that under consideration, will doubtless be corrected in the next edition.

TEXT-BOOK OF OPHTHALMIC OPERATIONS. By Harold Grimsdale, M.D., F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, and Elmore Brewerton, F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital. Cloth. Pp. 349. Price, $5.00 net. Chicago: W. T. Keener & Co., 1907.

This is a compilation of eye operative procedures by two well-known English ophthalmologists. In addition to the description of the operations, an introduction is given covering the necessary anatomy, physiology and surgical anatomy of the parts to be operated on. The literature has been fully reviewed and a condensed account of the various operations, with the name of the originator, is given. References to the original point, they are clear and practical, which is the main require- The illustrations are all schematic and done in black and white. While they might be improved from an artistic standpoint, they are clear and practical, which is the main requirement.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of the Second Annual Meeting, Washington, D. C., May 16 to 18, 1906. Paper. Pp. 638. Lancaster, Pa.: The New Era Printing Co.

The forty-one papers included in this volume, many of which have been published elsewhere, discuss a large variety of topics relating to tuberculosis, and furnish a body of reading on questions of great importance and interest to every physician. Abstracts of many of these papers appeared in the report of the meeting in THE JOURNAL for June 2 and 23, 1906, pp. 1720 and 1963.

AN INTRODUCTION TO PHYSIOLOGY. By William Townsend Porter, M.D., Associate Professor of Physiology in the Harvard Medical School. Cloth. Pp. 587. Price, $2.50. Philadelphia: J. B. Lippincott Company, 1906.

This is a collection of fundamental and accessory experiments in several fields printed in abbreviated form for temporary use. Dr. Porter evidently recognizes that the student is best taught by observation, as he bases his studies on experimental results, the student being required to perform each experiment. This makes the study of physiology practical and far more profitable than when taken up didactically. The subject is presented in an excellent manner.

OBSTETRICS FOR NURSES. By J. B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, etc. Second edition, thoroughly revised and enlarged. Cloth. Pp. 510. Price, $2.50 net. Philadelphia: W. B. Saunders Company, 1906.

Though this book is intended primarily for nurses, it will be of value to medical students and to recent graduates, as the duties of a nurse often devolve on physicians, especially during the first few years of practice. The technic in normal and abnormal cases is fully described and illustrated. The illustrations, many of which are from photographs, are excellent. The book contains much valuable information regarding the so-called minor points, mention of which is generally omitted from the larger works.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 4-7.

Medical Assn. of State of Alabama, Mobile, April 16.
Florida Medical Association, Tampa, April 17.
Medical Association of Georgia, Savannah, April 17.
Med. Soc. of the State of California, Del Monte, April 16-18.
South Carolina Medical Association, Bennettsville, April 17-19.
Medical and Chir. Faculty of Maryland, Baltimore, April 23-25.
Amer. Confed. Reciprocating, Exam. & Lic. Bds., Chicago, April 30.
Association of American Medical Colleges, Washington, May 6.
Amer. Assn. of Genito-Urinary Surgeon, Washington, May 7-9.
American Therapeutic Society, Washington, May 4-7.
Am. Assn. of Pathologists and Bacteriologists, Washington, May 7-9.
American Gynecological Society, Washington, May 7-9.
Amer. Climatological Association, Washington, May 7-9.
Amer. Laryngological Association, Washington, May 7-9.
Amer. Medico-Psychological Association, Washington, May 7-9.
American Ophthalmological Society, Washington, May 7-9.
American Orthopedic Society, Washington, May 7-9
American Pediatric Society, Washington, May 7-9.
American Assn. of Physicians, Washington, May 7-9.
American Surgical Association, Washington, May 7-9.
Nebraska State Medical Association, Lincoln, May 7-9.
Texas State Medical Association, Mineral Wells, May 7.
Utah State Medical Association, Salt Lake City, May 7-8.
New Mexico Medical Association, Las Cruces, May 8-9.
Kansas Medical Society, Kansas City, May 8-10.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

The President, Dr. O. Beverly Campbell, St. Joseph, Mo., in the Chair.

Nephrolithiasis Urica.

DR. A. C. CROFTAN, Chicago, presented a very full discussion of the prevention and treatment of this condition. He said that surgery can do no more than remove the calculi or establish drainage in infected cases, but it can not, in any way, influence the factors that determine the formation of uric acid calculi; that is, surgery can not cure nephrolithiasis. The treatment should be directed toward preventing the deposit of urates in the lower urinary passages, and with this end in view there must be considered the dilution of the urine, the total amount of uric acid and sodium chlorid in the urine, and the reaction of the urine. The patient should drink freely of water, not necessarily mineral waters, because it is the water and not the mineral it may contain that is of value. The liquid intake should exceed by far the original liquid output in the urine.

The diet should take into consideration the nuclein content of the food, and nuclein-containing organs should be eliminated from the diet. Dr. Croftan said that albumin *per se* is in no way a source of uric acid. It is very important not to underfeed the patient. Dr. Croftan advised the administration of alkalies, particularly of calcium carbonate, but advises caution in its administration in infected cases.

Surgery of the Thyroid.

DR. ALEX. HUGH FERGUSON, Chicago, in the oration on surgery, reviewed the indications for surgical intervention in diseases of the thyroid gland, the diagnosis of enlargements of the gland, and the methods of procedure for removal of the gland which he has found to be most valuable. He said that, generally stated, surgical intervention is not called for until other measures have been tried and failed. A study of 300 cases of thyroidectomy showed that in 77 per cent. dyspnea was the principal indication for operation; deformity in 24 per cent.; dysphagia in 8 per cent.; tracheal stenosis and discomfort in about 3 per cent. He has operated on 58 patients. In 44 cases of simple or cystic goiter there was no mortality. In 12 cases of exophthalmic goiter the mortality was 25 per cent. The causes of death were thyroidism in 2 cases and collapse of the trachea in one case. Four of the patients were in very poor condition and two of these died.

Gastroptosis.

DR. ROBERT T. SLOAN, Kansas City, Mo., advocated general hygienic measures, diet, mechanical support and rest in bed, the foot of the bed being elevated slightly, in the treatment of gastroptosis.

Treatment of Morphin Habit.

DR. W. F. WAUGH, Chicago, stated that, inasmuch as toxin retention is the disease, elimination is the remedy. Withdrawal symptoms, he said, are an evidence of autotoxemia. By eliminating the toxins as fast as tney are poured into the system there will be no withdrawal symptoms. He has treated a considerable number in this manner with great success.

Non-operative Treatment of Gastric Diseases.

DR. F. B. TURCK, Chicago, said that cases which manifest disturbance of function, but where no stenosis is found, do not demand surgical treatment, but rather physiologic methods of treatment; that is, dietetic, physical and mechanical. Operative treatment is indicated when there is obstruction of the stomach outlet, as in benign superficial stenosis or early malignant growth, when the diagnosis is uncertain and characterized by progressive loss of weight and when all symptomatic treatment fails.

Pelvic Abscess.

DR. W. T. ELAM, St. Joseph, Mo., advocated hysterectomy by the two-stage method in case of multiple abscesses of the uterus, vaginal drainage in walled-off abscesses, salpingectomy or oöphorectomy, when demanded, as secondary measures. In cases of chronic pyosalpinx the abdominal route is preferred.

Hernia.

DR. D. C. HILTON, Lincoln, Neb., classifies hernia as follows: (1) Hernioida protrusa and (2) hernia vera. Among the first are cases of protrusion invested by the mucocutaneous membranes of the body through an orifice of the mucous or cutaneous surface.

The second class, hernia vera, comprises the congenital and acquired hernia. This classification is based on the conception that the body is a tube, the continuous covering of which is epithelium, which spreads over the general inner and outer surfaces of the tube, and also into all diverticula and recesses.

Experience with Morphin-Hyoscin Compound.

DR. F. E. WALKER, Hot Springs, S. D., reported 75 cases in which he made use of this compound with most excellent results. No untoward symptoms were observed and no evil effects were noted as the results of large dosage.

Dangers from Tuberculous Milch Cows.

DR. S. R. TOWNE, Omaha, stated that evidence is accumulating supporting the theory that infection of the lung occurs not by inhalation, but by the ingestion of bacilli, and that there exists an intercommunicability of all types of tuberculosis, the bovine being the most active. He emphasized the greater susceptibility to tuberculosis of the child, and pointed out that milk must be reckoned with as a probable source of infection in tuberculosis. He said that any system of prophylaxis which ignores the tuberculous milch cow must be considered incomplete.

Treatment of Exophthalmic Goiter with Electricity.

DR. R. D. MASON, Omaha, reported one case in which the main feature of treatment consisted of the introduction into the thyroid of iodin by cataphoresis. The patient, aged 45, had manifested symptoms for two years. Treatment was instituted six months after the onset of the disease and was given twice a week for six weeks. Strychnin was the only agent given internally. Improvement was marked and steady from the beginning of the treatment. The circumference of the neck finally was two inches less than when the patient was first seen, although the pulse rate was still about 100, and the pulse was quite irregular. The tremor was much improved, there was no pain, the eyes were normal, and insomnia, from which the patient had suffered severely, was relieved.

Other Papers Read.

The following papers were also read:

"Gall Bladder Disease," by Dr. A. L. Wright, Carroll, Iowa; "Specialism," by Dr. P. I. Leonard, St. Joseph, Mo.; "Some Views on Appendicitis," by Dr. C. O. Thienhaus, Milwaukee; "Pulsating Exophthalmos Treated by Excision of the Superior Ophthalmic Vein," by Dr. H. Gifford, Omaha; "Renal Calculi," by Dr. B. A. McDermott, Omaha; "Vesicovaginal Fistula," by Dr. F. A. Long, Madison, Neb., and "Anterior Suspension of the Uterus," by Dr. F. B. Dorsey, Keokuk, Iowa.

The annual meeting will be held in Council Bluffs, Iowa, Sept. 5, 1907.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Feb. 7, 1907.

The President, DR. WILMER KRUSEN, in the Chair.

Chorea During Pregnancy.

DR. COLLIN FOULKROD reported a case of a patient in whom chorea occurred in the course of five successive pregnancies, possibly causing the death of three or four of the fetuses. By careful watching he succeeded in carrying the woman to term and delivering her of a living child. Bromid and chloral were administered.

Diagnosis of Early Pregnancy.

DR. ELLICE MCDONALD examined 100 cases at various weeks of pregnancy. The duration of the pregnancy was calculated from the date of the last menstruation. The pelvic signs were the only ones closely studied. Jacquemien's sign of the violet hue of the vagina was found to be of the most value after the eighth week. It was first noticed at a spot just below the urethra. Blush of the cervix was noted in much the same percentage of cases as Jacquemien's sign. It was also noted that in the early stages of pregnancy there is a marked difference in the ease with which the body of the uterus can be moved on the cervix and the cervix on the fundus. This was usually best noted about the fifth week and is usually so marked that the body and the cervix may be doubled on themselves and brought together, the empty bladder and vaginal walls alone separating them. This sign was best obtained by placing the palmar tips of the vaginal fingers posteriorly and below the end of the cervix, and the fingers of the abdominal hand on the top of the fundus. The bladder must be empty and there must be no contraction of the uterus. The sign is easily obtained after slight practice. It may be obtained before there is thinning of the lower segment, but is caused by the same conditions which produce Hegar's sign.

DR. BARTON COOKE HIRST spoke of the possibility of gross error of diagnosis in early pregnancy and of the necessity of methodical examination of patients. The sign to which attention had been called in Dr. McDonald's paper he has always grouped with Hegar's sign, making no distinction between the softening of the lower segment and the thinning. Among the signs of early pregnancy on which he depends, the softening of the cervix holds an important place. The eccentric hypertrophy of the cervix he also regards as an important sign. Without this he does not think pregnancy is possible, and by its absence it is often impossible to say that pregnancy could not exist in a certain case. If, on the contrary, the cervix is much broader and softer than normal, pregnancy is at least probable. The change of color in the genital tract he regards as a valuable symptom when obtainable. It, however, is lacking in a considerable percentage of the early cases, the very cases in which the diagnosis is most difficult and most desirable. One fact about the change of color which is seldom mentioned is that as pregnancy advances the blue or purple discoloration of the genital canal is sometimes absent, but he has never seen a case in which, if this blue discoloration is absent, there is not a transformation of the pink of the mucous membrane of the introitus and vestibule into a bright scarlet.

DR. EDWARD P. DAVIS said that in an examination and diagnosis of early pregnancy a systematic procedure is of the utmost importance. The head, face and neck of the patient should be investigated to determine the enlargement of the thyroid, alterations in the pupils, abnormalities in the color of the face and the presence or absence of abnormalities in the nose, throat and mouth. In some normal pregnancies the thyroid is said to be slightly enlarged, while in pseudocyesis the thyroid is often considerably diseased. The action of the heart is readily excited during pregnancy and hemic murmurs are often present in the early months. One of the most significant symptoms of early pregnancy in gouty and neurotic women, he said, is a generally irritable condition of the mucous membrane of the nose. In one such case the condition at once disappeared after abortion. Dr. Davis said that he has been accustomed to search for softening in the lower uterine segment and to consider this as strongly suspicious of pregnancy. In examinations this phenomenon is usually associated with enlargement of the uterine body and the two are taken together as practically constituting Hegar's sign. Disturbances in metabolism are present in early pregnancy. Color signs in the genital canal he regards as suggestive rather than decisive. When the examination of the uterus gives several signs significant of pregnancy and the general examination of the patient coincides, the patient is probably pregnant, but a positive assertion should be withheld until positive evidence of fetal life is obtained.

DR. RICHARD C. NORRIS believes that the positive diagnosis of early pregnancy will always be a very difficult matter in spite of the most advanced refinements in diagnostic means. One of the most practical points is to examine the patient at intervals and repeatedly before coming to any conclusion in doubtful cases. Since women differ greatly in anatomic peculiarities, such, for example, as the flexibility or eccentric enlargement of the cervix, it is necessary to reserve even a presumptive diagnosis until the patient is seen on more than one occasion. He confesses that he has yet to make an *early positive* diagnosis by means of any of the early diagnostic signs and has had to wait until time and other signs made the diagnosis positive.

He has studied many cases of early pregnancy for Hegar's and Braxton Hicks' signs, and believes that the personal equation of the examiner is an important factor, and that a part which may feel soft one day may not at the next visit. He feels that Dr. McDonald has done some careful work in exploiting flexibility or thinning of the lower uterine segment as an early sign of pregnancy. Personally he has not felt justified to conclude that there is thinning of the lower uterine segment without recto-vaginal examination. The sign which has helped him most is the change in the shape of the uterus, presenting what is termed a jug-shaped uterus.

DR. CHARLES P. NOBLE feels that at or before the tenth week the clinical signs mentioned seldom assist in a definite diagnosis. The "jug sign" of pregnancy has been most helpful to him in the early diagnosis of pregnancy. In his experience Hegar's sign is of little value before the twelfth week.

DR. GEORGE M. BOYD emphasized the necessity of repeated examinations. He has found Hegar's sign of value and also the change in the shape of the upper segment of the uterus. He referred to two cases which had come to his notice in which the diagnosis of uterine and ectopic gestations had been confounded.

Pubiotomy.

An abstract of Dr. Richard C. Norris' paper appears in THE JOURNAL, April 13, page 1298.

DISCUSSION.

DR. CHARLES P. NOBLE has not done this operation and personally sees no advantage in sawing through bone to cutting through the symphysis. In Heidelberg he learned of a case of fatal hemorrhage after operation.

DR. BARTON COOKE HIRST has done two pubiotomies during the last two weeks. In the first case he had occasion for much enthusiasm, but the second gave him much trouble and anxiety. The first was a patient whom he had delivered five years before by Cesarean section. After etherization the cervix was dilated with Bossi dilators, a Pomeroy bag inserted and the patient laid aside, and at the end of an hour and twenty minutes she was again anesthetized and the operation done, resulting in the easy extraction of the child and the subsequent well-being of both mother and child.

In forty-eight hours later he had an illustration of almost all the disadvantages of pubiotomy in a woman in labor for thirty-six hours. The first disadvantage encountered was from the woman's obesity. There was a rachitic pelvis and the child was much over size, and the operation was attended with various other difficulties. Four days after delivery the woman developed symptoms of infection. The patient recovered. Dr. Hirst believes that for the general practitioner who must operate in insuperably obstructed labor Cesarean section is the operation of choice.

Fibroma of Uterus.

DR. GEORGE ERETY SHOEMAKER said that no arbitrary limit can be placed in the reduction of hemoglobin, beyond which hysterectomy is unjustifiable if demanded to save life. A uterus was shown, removed by supravaginal hysterectomy from a single woman aged 35, whose hemorrhage had reduced her hemoglobin to 25 per cent. Her mucous membranes were almost white. She had shortness of breath and tinnitus and was subject to asthmatic attacks. The tumor, multinodular, interstitial, weighing about three and a half pounds, was hard and irregular, invading every portion of the uterus. Intravenous salt solution injected during operation, great care in conserving body temperature and attention to detail brought about a normal convalescence, the highest pulse being 98, and that immediately after operation.

Another uterus was shown with a large intramural degenerating fibroma. The patient was aged only 29, but had been greatly debilitated both by hemorrhage and the absorption of toxins from the tumor. The hemoglobin was 62 and was, therefore, not the real index of the amount of systemic change. The tumor was grayish-white, with areas shading to dark gray. Macroscopically it resembled sarcoma, but the microscopic report was fibroma.

FIRST COUNCILOR MEDICAL SOCIETY OF MICHIGAN.

Third Annual Meeting, held March 28, 1907.

DR. J. H. CARSTENS, Detroit, in the Chair.

The third annual meeting of the First Councilor Medical Society, Michigan, comprising the county societies of Lenawee, Macomb, Munroe, Oakland, Washtenaw and Wayne, was held March 28, 1907, at the Hotel Cadillac, Detroit. About 125 sat down at the banquet. The toastmaster was Dr. David Inglis, Detroit. Dr. A. W. Chase, Adrian, replied to the toast "The General Practitioner;" Dr. J. D. Riker, Pontiac, replied to "The Doctor's Price;" Dr. A. M. Barret, Ann Arbor, to "The Relation of the Psychopathic Hospital to the General Practitioner," and Dr. V. C. Vaughan, Detroit, to "The Specialist."

The following papers were read at the afternoon session:

The Advantage of Laparotomy Over Tapping in Ascites.

DR. GEORGE DOCK, Ann Arbor, urged incision, instead of paracentesis, in all ascitic cases in which the diagnosis is uncertain, in order to avoid the slight risk involved in paracentesis, and to provide the best opportunity for making a certain diagnosis and applying surgical measures, if indicated, immediately.

DISCUSSION.

DR. T. A. MCGRAW, Detroit, said that he has incised many ascitic patients who were in very dangerous condition, without shock or other bad result. An advantage of incision over puncture is that incision can be followed by drainage, if needed, as in tuberculous peritonitis.

DR. C. S. OAKMAN, Detroit, said that ascites usually indicates a serious cause. If cardiac or renal, the cause can usually be found without exploration. If hepatic, diagnosis without operation is more difficult. If inflammatory, tuberculous or neoplastic, incision is needed not only for diagnosis, but the early surgical therapy that incision makes possible is of great value.

DR. J. H. CARSTENS, Detroit, said that he has not done a paracentesis of the abdomen for twenty years, because he regards it as dangerous and nearly always less advantageous than incision. But paracentesis may occasionally be advisable in order to facilitate palpation, and by this means to learn where to make the exploratory incision, above or below the umbilicus.

Importance of Complete Extirpation in Tonsil Operation.

DR. E. T. MORDEN, Adrian, said that after partial removal of the tonsils there is better opportunity for infection than before, although the obstructive symptoms may be relieved. So-called regrowth means incomplete removal.

DISCUSSION.

DR. D. M. CAMPBELL, Detroit, said that he is in the habit of leaving some of the tonsil in order that the part left might exercise the probably beneficial function of the tonsils. It is impossible to extirpate the tonsil with a tonsillotome; a punch or scissors must be used afterward for complete removal.

DR. J. V. WHITE, Detroit, said that if the condition is inflammatory and recurrent, and the lacunæ extend deep, total enucleation is indicated.

DR. A. P. OHLMACHER, Detroit, said that hypertrophy of the tonsil might indicate the status lymphaticus, on account of which the anesthetic and shock of the tonsil operation might prove serious.

DR. WILLIS S. ANDERSON, Detroit, said that the reasons for removal of the tonsils are either mechanical or absorptive. If mechanical, partial removal may be sufficient; if, however, removal of the tonsil is indicated to prevent absorption, the normal function of the tonsil is lost, and the tonsil should be removed completely. The atrophy of the faucial pillars, he said, is due to needless damage done the pillars in the enucleation, and not to complete removal of the tonsil. The tonsil should be dissected off the pillars accurately. In children partial removal may be all that is needed or safely possible. The remote possibility of the status lymphaticus should not prevent the operation. A bent probe is a useful means of investigating crypts and pockets, and crypts and pockets in the tonsil are of more importance than simple hypertrophy.

DR. EMIL AMBERG, Detroit, said that the normal tonsil has no needed function.

DR. R. S. ROWLAND, Detroit, has observed in several children more symptoms from the tonsil after the tonsil operation than before it.

Empyema.

DR. R. Y. FERGUSON, Pontiac, emphasized the importance of early diagnosis, by the aspirating needle, especially in children, and the need for prompt drainage by rib resection.

DISCUSSION.

DR. A. P. OHLMACHER, Detroit, reported two cases of empyema that had been strikingly benefited by artificial autogenous vaccination.

DR. KENNETH GUNSOLUS, Detroit, believes that it is not always necessary to resect a rib in children. In adults, however rib resection seems always wise.

The following cases were exhibited: "Sciatica Due to Sprain of Sacroiliac Joint," by Dr. W. E. Blodgett, Detroit; "Case of Rhinolith," by Dr. J. W. White, Detroit; "Exophthalmic Goiter," by Dr. C. M. Hagen, Detroit. Papers were read on "Opsonins and Bacterial Vaccines," by Drs. E. C. Miller and E. M. Houghton, Detroit.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 16. Secretary, Dr. Chas. L. Tisdale, San Francisco, Cal.

MISSOURI State Board of Health, St. Louis and Kansas City, April 16-18. Secretary, Dr. J. A. B. Adcock, Warrensburg.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, April 17-19. Secretary, Dr. J. A. Egan, Springfield.

KENTUCKY State Board of Health, City Hall, Louisville, April 23 Secretary, Dr. J. N. McCormack, Bowling Green.

GEORGIA Regular Board of Medical Examiners, Capitol Building, Atlanta, April 30-May 1. Secretary, Dr. E. R. Anthony, Griffin.

TEXAS State Board of Medical Examiners, Austin, April 30-May 2. Secretary, Dr. T. T. Jackson, San Antonio.

TEXAS Eclectic Medical Board, Dallas, about April 25. Secretary, Dr. L. S. Downs, Galveston.

South Dakota January Report.—Dr. H. E. McNutt, secretary of the South Dakota State Board of Medical Examiners, reports the written examination held at Sioux Falls, Jan. 9-10, 1907. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 13, of whom 9 passed and 4 failed. Twenty-two reciprocal licenses were granted at this examination. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Northwestern University	(1906)	78, 78.* 89.7
College of P. and S., Chicago	(1905)	82.9; (1906) 76.9†, 85
University of Iowa	(1906)	81.6
Lincoln Med. Coll.	(1906)	81.3†
Jefferson Med. Coll.	(1906)	81.1
Trinity Med. Coll., Toronto	(1904)	84.2
FAILED.		
American Coll. of Med. and Surg.	(1905)	68.4
Medical Coll. of Indiana	(1905)	67.2†
Barnes Med. Coll.	(1905)	69†
Bennett Coll. of Ecl. Med. and Surg.	(1906)	72.8

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Rush Med. Coll.	(1903)	Iowa
College of P. and S., Chicago	(1901), (1904), (1906)	Iowa
University of Iowa	(1904), (2, 1906)	Iowa
Drake University	(1905), (2, 1906)	Iowa
Sioux City Coll. of Med.	(2, 1906)	Iowa
Keokuk Med. Coll., Coll. of P. and S.	(1906)	Iowa
Tufts Coll. Med. School	(1898)	Iowa
University of Minnesota	(1904) Iowa; (1905), (1906)	Minnesota
Ensworth Med. Coll.	(1904)	Iowa
Creighton Med. Coll.	(1906)	Iowa
Cleveland Univ. of Med. and Surg.	(1897)	Minnesota
Jefferson Med. Coll.	(1906)	Iowa
Trinity University, Toronto	(1896)	Minnesota

* Examined July, 1906, and licensed Jan. 10, 1907.
† Second examination.

District of Columbia January Report.—Dr. George C. Ober, secretary of the Board of Supervisors in Medicine, reports the written examination held at Washington, Jan. 11-14, 1907. The number of subjects examined in was 17; percentage required to pass, 75. The total number of candidates examined was 11, of whom 6 passed and 5 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
George Washington Univ.	(1899) 89.6; (1906) 76.1, 78.4,	85.8
Howard University	(1906)	81.4
Georgetown University	(1903)	81.3
FAILED.		
Georgetown University	(1905)	68.2
George Washington University	(1905), 69.6; (1906)	70.1
Baltimore Med. Coll.	(1904)	71.5
University of Virginia	(1906)	71.5

Arizona January Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phœnix, Jan. 7-8, 1907. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 10, of whom 9 passed and 1 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Keokuk Med. Coll., Coll. of P. and S.	(1901) 83.4	(1906) 85.7
Rush Med. Coll.	(1904) 85.3,	91
St. Louis University	(1904)	80
Long Island Coll. Hosp.	(1905)	85
College of P. and S., New York	(1901)	84
Cincinnati Coll. of Med. and Surg.	(1880)	90
Jefferson Med. Coll.	(1905)	85.5
FAILED.		
Barnes Med. Coll., St. Louis	(1902)	30

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and methods of treatment for the diseases seen especially in every-day practice. Contributions will be welcomed from our readers.]

OINTMENTS.

By W. A. Jolley, M.D.

BOULDER, COLO.

FATS AND OILS.

The customary distinction between fat and oil is that one is a solid and the other is a liquid. They are abundant in Nature and easily obtained. Their use in medicine is accompanied by the usual fantasies which tradition favors old remedies. There is a fascination which the names goose grease, skunk oil, rattlesnake oil, etc., convey that will not be displaced in the minds of the laity or the medical profession by hard scientific facts. We find their principal use in salves which were applied on any and all occasions, the most obnoxious smelling and abhorrent mixtures being credited with the greatest healing powers.

Antiseptic surgery did not cause a diminution in their use, but created a new field as vehicle for the multitudinous antiseptic agents. Advance in the knowledge of organic chemistry has given us a better understanding of individual members of the fats, but has caused confusion by adding so many new ones to the already large list.

MINERAL FATS.

The elegant mineral fats now on the market have nearly supplanted the vegetable and animal fats which were our main reliance; this should not be the case, for each has its use. Crude petroleum is a complex mixture, which gives a series of products, rhigolene, gasoline, benzine, kerosene, and a solid residuum from which we get vaselin (petrolatum), paraffin, lubricating oils, and many other substances.

The Pharmacopeia gives Petrolatum Liquidum, Petrolatum Album, Petrolatum and Paraffin. The only practical difference is their melting points. Ointments of any degree of solidity can be made by combining the proper amounts of each. Enterprising manufacturing chemists have improved on these U. S. P. standards and furnished splendid preparations of the mineral oils, from the liquid ones to be used in atomizers to the hard waxes, giving each a trade name.

The mineral fats are not subject to any chemical reaction at the temperature ointments are used, they are not oxidized, do not form irritating salts nor break up into other compounds, and should be used as vehicles for active principles to produce local antiseptic, anesthetic, irritative and protective action. They are not absorbed by the body and should not be used when systemic effect is desired through external applications.

The fact that they are not subject to chemical change renders them specially adapted to all cosmetic purposes, for the animal and vegetable fats will often become rancid and offensive to the sense of smell and irritating to the surface to which they are applied. Cold Cream (Unguentum Aquæ Rosæ) is an elegant pharmaceutical mixture and should be used more than it

is, but it will occasionally become rancid. A similar appearing mixture which will not deteriorate with age can be made by substituting Petrolatum Liquidum for almond oil. The presence of borax in cold cream causes it to become discolored when certain chemicals are added to it. This would not happen with mineral fats, for no antiseptic is needed to keep them from becoming rancid. If Unguentum Aquæ Rosæ is prescribed the ointment should be made as given in the U. S. P., unless there is an understanding between the druggist and physician.

VEGETABLE AND ANIMAL FATS.

Most of the vegetable and animal fats belong to the chemical class known as the fatty acids. Those of practical use are palmitic, stearic and oleic acids. They do not exist as acids in Nature, but as glycerids, that is in chemical combination with glycerin. They are not found separate, but always together in varying proportions; in vegetable fats, oleic acid predominates, causing them to be liquids; in animal fats, the excess of either stearic or palmitic acid causes them to be solid.

Some slight chemical reaction in the growing plant causes a small portion of the fat to assume a certain definite composition, which gives each oil a distinctive feature. For example, linseed oil is characterized by linoleic acid, an oxidation product of oleic acid; castor oil by ricinoleic acid, etc. These various oils and fats also contain bodies which give each a distinctive odor, while they may be nearly alike chemically. They form salts with alkalies, which we call soaps; sodium salts are generally solid, and potash salts or soaps are soft.

The higher members of this class, the ones we are discussing, are insoluble, but readily break down into lower members of the same class, which are soluble butyric acid and others, which fact enables us to separate the two by washing with water.

Fats exist in Nature in the form of minute globules invested by a proteid membrane, in large masses in the animal and in certain tissues in the vegetable. The animal tissues are cut into fragments, to facilitate the release of the fat from its investing sheath, are liquefied by the application of heat, and removed by straining and pressure. In removing the vegetable oils pressure alone is used to remove a part of the oil, the highest grade; heat is then applied, followed by pressure, which produces an oil of lower grade. If the membrane is not entirely removed it decomposes readily and causes the fat to become rancid. This is shown by the rapid decomposition of butter when the casein has not been entirely removed. This decomposition is a chemical change resulting in the formation of other compounds offensive in odor and irritating to the skin or mucous membrane. It is also facilitated by many organic drugs, so we often find salves which are intended to be bland applications turn into very irritating applications. It is stated that the organic preparations which liberate oxygen should always be combined with the mineral fats for this reason. The common oils and fats are: Linseed, olive, almond and cottonseed oils; suet, tallow, lard and others which are likewise suitable for pharmaceutical use, but commercially impracticable.

Linseed Oil.—Linseed Oil (Oleum Lini) is a mixture of from 10 to 15 per cent. of palmitin and stearin, and from 85 to 90 per cent. of the glycerids of oleic and linoleic acids. The last mentioned acid is an oxidation product of oleic acid and gives this oil its distinctive features. It is called a drying oil for the oxidation, having begun, continues rapidly when exposed to air, and forms a hard resinous mass, if in bulk, or a hard film when spread over a surface. This is the reason for its use in painting. If the oil be finely subdivided, as on old rags, the oxidation takes place so rapidly that it bursts into flames. This is the cause of so many fires of spontaneous combustion, and should be considered when large quantities of Carron Oil (Linimentum Calcis) are applied on gauze to burns. The process of drying or hardening is facilitated by boiling the oil with oxidizing substances, such as lead acetate, red lead, litharge, manganese dioxid, manganese borate and others. Boiled oil is then very different from the raw oil, yet few druggists know the distinctive features of the two.

Other oils which belong to this class are candlenut oil, corn oil, grapeseed oil, hempseed oil, nigerseed oil, pumpkinseed oil, sunflower oil, walnut oil and wood oil. These oils are not suitable for use in ointments, except when a hard base is required, or for immediate use.

Olive Oil and Almond Oil.—Olive Oil (Oleum Olivæ) and Almond Oil (Oleum Amygdalæ Expressum) have no distinctive features and are good examples of the so-called primary fats, as each contains about 70 per cent. of oleic acid, as olein, with 30 per cent. of palmitin and stearin. They are used principally for these fats, the purity of which depends on the condition of the fruit and care in extracting the oil. Being free from extraneous matters these oils are admirably suited for use in ointments and soap making. The U. S. P. Sapo (common Castile Soap) is made from olive oil and sodium hydrate. The mottled appearance of the old soaps was due to the minute quantity of iron in the water used in making the soap. The U. S. P. Sapo Mollis (soft soap), made from linseed oil, shows the difference in the oils. The fact that one is hard and the other is soft is due to the alkali used, as has been stated.

Cottonseed Oil.—Cottonseed oil does not differ much from the preceding oils after it has been purified, in fact much of the "olive oil" sold is cottonseed oil. Cottonseed oil contains a large amount of palmitin and stearin and forms the basis for the commercial articles known as cottolene and lard compounds.

Lard.—Lard (Adeps) is the name applied in commerce to almost any mixture of grease, and it seems that most of the pharmacists have the same idea, and are unaware that there is a standard established for this article, for the substance they dispense resembles that sold by the grocer and market man. Lard should be a mixture of stearin, palmitin and olein, and not these fats in different stages of decomposition. The U. S. P. requires that only the abdominal fat of the hog be used in making lard, while commercially any fat is used. Adeps Benzoinatus is intended to remedy the difficulty by adding an antiseptic to prevent decomposition and perfume the lard, but it is not as good as pure lard, for it often covers a slight amount of rancidity.

Suet.—Suet (Sevum Preparatum) does not differ much from lard chemically except in the odorous principles. It is made from the abdominal fat of the sheep.

Tallow.—Tallow is not recognized in the U. S. P., but is used in the lard compounds with cottonseed oil. It is obtained from the internal fat of the beef.

These oils and fats are not firm enough to form ointments, so beeswax (Cera alba and flava) and spermaceti (Cetaceum), are added in sufficient amounts to bring them to the required consistency. Their chemical nature is similar so the only effect produced is in raising the melting points of the mixtures. We use these animal and vegetable fats as vehicles to carry active principles which we wish to apply to the surface of the body for the purpose of producing systemic effect. The mineral fats are used only when local action is desired. The resulting compound is called an ointment or a cerate, according to its consistency. Ointments are soft, cerates are firmer.

The U. S. P. gives a formula for an ointment (Unguentum) as follows:

Ceræ flavæ	℥v	20
Adipis benzoinati	℥xx	80

The German Pharmacopeia gives a different mixture, which will help illustrate the fact that we can obtain the same degree of consistence by different methods:

Ceræ flavæ	℥i	30
Olei olivæ	℥xviiss	70

We should remember then that the word Unguentum has a definite meaning and indication. It should not be written Unguentum Simplex, for the last word is superfluous.

(This subject is to be continued.)

Iodin in Granular Pharyngitis.

In cases of middle-ear catarrh associated with granular pharyngitis, W. L. Ballenger, Chicago, employs the following formulas:

℞. Tincturæ iodi	m. xlviii	3|5
Glycerini q. s. ad	f℥i	30

M. Sig.: Apply to pharynx with swab once daily.

℞ Iodoformi .....gr. i |06
Potassii iodidi.....gr. x-xx |6-1.3
Morphinæ sulphatis.....gr. i |06
Glycerini .....f℥i 30|
M. Sig.: Apply to pharynx with swab once daily.

℞ Tincturæ iodi.....gr. v-xx |3-1.3
Potassii iodidi.....gr. x-xxx |6-2.
Olei gaultheriæ.....m. v |3
Glycerini .....f℥i 30|
M. Sig.: Apply to pharynx with swab once daily.

℞ Tincturæ iodi
Tincturæ ferri chlor.
Glycerini, āā, q. s. .....f℥i 30|
M. Sig.: Apply to pharynx with swab once daily.

Medicolegal

Cause of Death After a Fall.

The St. Louis Court of Appeals says that in the case of Johnson vs. Continental Casualty Company, the insured, a motorman, met with a fall in his home and the injuries then received were said to have caused his death two weeks later. According to witnesses who saw the accident, he had gone from one room of his home to the other to get a drink, and, as he went back, fell against a dresser having a marble top and from thence to the floor. The court holds that if either traumatic pneumonia or cerebral hemorrhage ensued as the result of the fall, and the insured died in consequence of the disease, his death was caused proximately and solely by accidental violence within the meaning of the policy. It says a physician testified that the patient must have died from one of those causes, but which one could not be known without knowing the patient's temperature at intervals, his other symptoms preceding death, and whether he had any prior diseases; that, if he was in good health before the accident, in the opinion of the witness, he must have died of one of said ailments. The value of the physician's testimony was to be determined by the jury. The court found nothing which appeared to it to be incredible in what he swore to. No doubt it was possible for the insured to have died of some ailment unconnected with the accident and which he was afflicted with prior to the accident or contracted subsequently, but whether he did or not was, on the evidence adduced, a fact to be found by the jury. Demonstrative proof that he died solely in consequence of the accident, hardly could be made. On such issues evidence can not go beyond producing that degree of conviction in reasonable minds on which men are accustomed to decide and act in ordinary affairs. All possibility of mistake can not be excluded.

Non-Experts May Testify to Symptoms But Not to Diseases.

The Court of Appeals of Kentucky holds, in Illinois Life Insurance Company vs. De Lang, that no witness, not an expert, should be allowed to state his opinion that the insured had consumption or did not have it, or that he was in good health or bad health. The non-expert witnesses may detail the facts that they know. They may tell what symptoms they saw or observed, but the jury can judge as intelligently as the witnesses as to what the symptoms indicated. The court also holds that the insured's wife was a competent witness for the plaintiff. She might testify as any other witness as to the health of her husband, or as to what he did, or as to any other matters not involving communications between her and her husband growing out of the marital relation. The court sees no objection to the testimony which she gave in the case to the effect that her husband did not have this or that symptom at a certain time.

Exhibition of Amputated Leg to Jury.

The Court of Appeals of Kentucky says, in Ford vs. Providence Coal Company, that it was assigned as error that the trial judge refused to permit the plaintiff to exhibit his injured leg to the jury, but as the leg had been amputated, this ruling was not prejudicial. However, in the trial of personal injury cases, the court goes on to say, it is competent for the plaintiff to exhibit the injured member to the jury, and this he may do on the request of his counsel or of the adverse party—provided that the exhibition does not violate any rule of propriety or decency. Whether it does so or not is, of course, a question that must be left largely in the discretion of the trial judge. No objection of this kind could be urged in this case, as the exhibition of a man's leg that has been amputated could not be considered at all improper. Evidence of this character is really the best evidence obtainable of the extent and character of the injury that the person seeking damages has sustained, and the jury has the right to be aided in making up their verdict by a personal view of the injured member.

Expense of Protecting Public from Insane Pauper.

The Supreme Judicial Court of Maine holds, in the case of Inhabitants of Town of Casco vs. Inhabitants of Town of Linington, that the expenses incurred by a town to protect its inhabitants or the public from danger of injury by insane paupers are not recoverable under the pauper statute, nor under the contagious diseases statute, which authorizes the recovery only of the expenses of relieving persons destitute, and of their removal or burial. The statute authorizing recovery of expenses of preventing the spread of contagious diseases by paupers is not applicable to a case of insanity.

Homicide by Abortionist—"Private Papers"—Evidence.

The Supreme Court of Illinois says, in Clark vs. People, that Section 3, Division 1, of the Criminal Code of Illinois reads: "Whoever, . . . causes any woman, pregnant with child, to abort or miscarry, or attempts to procure or produce an abortion or miscarriage, unless the same were done as necessary for the preservation of the mother's life, shall be imprisoned . . . ; or if the death of the mother results therefrom, the person procuring or causing the abortion or miscarriage shall be guilty of murder." It was insisted that this statute does not provide that if the death of the mother results therefrom, the person attempting the abortion or miscarriage shall be guilty of murder, but only in case a person actually causes the abortion. But the court believes the fair and reasonable construction to be that when death results either from an abortion or an attempt to produce an abortion the person responsible should be held guilty of murder.

Furthermore, the court is also of the opinion that, under the last part of Section 145 of the Criminal Code, which reads, "where such involuntary killing shall happen in the commission of an unlawful act, which in its consequences naturally tends to destroy the life of a human being, or is committed in the prosecution of a felonious intent, the offense shall be deemed and adjudged to be murder," the accused under the indictment in this case could be held for murder.

Some of the counts of the indictment charged the instrument to have been thrust into the "body and womb," and other counts into the "private parts and womb," and it was insisted that there was fatal variance, in that the proof showed that the instrument was not thrust into the womb, but into the bladder. But the court thinks that, apart from technical distinctions, the term "private parts" sufficiently describes the female organ of genitation and its immediate vicinity, not only for that particular and limited portion anatomically known as the womb, but for the vagina, the urethra, and lips of the womb. It says that the fact that the instrument inserted through the lips of the private parts entered the urethra and pierced the bladder, instead of passing up the vagina and into the womb, did not in any way mislead the accused.

The court also says that evidence to convict of a crime such as here charged, in the absence of the testimony of the victim, is almost always circumstantial, and hence the question of the admissibility of collateral facts in evidence is often to be determined by the nature of each case. And it holds that on a trial for an offense such as charged in this indictment intent is an essential ingredient, and it is competent to show the declarations of one on trial for procuring an abortion, to the effect that she was in the habit of performing or had solicited such work.

Liability for Communication of Smallpox by Agent.

The Court of Civil Appeals of Texas affirms, in Missouri, Kansas & Texas Railway Company of Texas vs. Raney, a judgment for $150 in favor of the latter party, who brought the action to recover damages for the company's ticket agent communicating smallpox to him and his wife. It holds that the company, under the common law, owed to the individuals composing the public who dealt with it the duty to keep them from having contagious diseases communicated to them by its agent while they were dealing with it through such agent.

The testimony of a physician to the effect that, according to his best recollection, he had seen and examined the agent, and that he then had smallpox, and that he so told him, the court holds was sufficient to support a finding of the jury that the agent had smallpox and knew it when the plaintiff bought tickets of him for himself and wife. It also holds that the testimony was sufficient to support the finding of the jury that the plaintiff contracted the smallpox from the company's agent, when, in so far as the evidence showed, such agent was the only person to whom the plaintiff was exposed who had the disease, and the evidence showed that the plaintiff contracted it within the usual time after such exposure.

The company's contention that knowledge on the part of its ticket agent that he had smallpox at the time he sold the tickets to the plaintiff would not constitute knowledge on its part of such fact, the court does not think sound. In its opinion, the agent at the time the plaintiff was exposed to him, being the ticket agent of the company and in the discharge of the duties incumbent on him as such agent, and the plaintiff being present for the purpose of transacting business with him in the line of his duties to the company, and the agent at the time having the contagious disease of smallpox, and knowing that he had it, his knowledge became that of his principal, the railroad company.

Furthermore, the court holds that the act of the company's agent in communicating to the plaintiff smallpox was the proximate cause of the plaintiff's wife contracting the disease, and his being quarantined on account of his wife's having smallpox. It says that the company, through its agent, knew from the attending circumstances that the tickets sold were for the plaintiff and his wife, and of that relationship between them, and that, in their companionship and association with each other during the trip on the cars and while visiting in Alabama, they would not only be in close proximity with each other, but frequently in personal contact with each other, so that if the husband contracted the disease of smallpox from the agent of the company, it was natural and probable that he would communicate it to his wife; and such a result was one that might reasonably have been anticipated by the company through its agent.

Therefore, the company, having notice through its agent, at and prior to the time the plaintiff was exposed to him, that he had the smallpox, and said agent having communicated said disease to the plaintiff and his wife, the court holds that the company was liable to the plaintiff for the damages sustained by him as the direct and proximate results of such wrongful act of its agent. Nor does it think the losses sustained by the plaintiff in his business on account of patrons being kept away through fear of contracting the disease were too remote to be recovered.

Presumptions and Proof Requirements as to Suicide.

The Supreme Court of Minnesota holds, in the case of Lindahl vs. Supreme Court Independent Order of Foresters, an action to recover the amount of a benefit certificate, that, the defense being suicide, (a) The burden of proving that the deceased committed suicide was on the defendant. (b) The presumption is against suicide. (c) If the known facts are consistent with the theory of natural or accidental death, the presumption which the law raises from the ordinary motives and principles of human conduct requires a finding against suicide. (d) When circumstantial evidence is relied on, the defendant must establish facts which exclude any reasonable hypothesis of natural or accidental death.

The court says that it is settled that on the issue of suicide the burden is on the defendant, who asserts the fact, to prove the same by a fair preponderance of the evidence. In all legal discussion the existence of certain qualities in human nature are presumed. Common experience teaches that the love of life, the instinct of self-preservation, respect for the laws of the land, and the principles and teachings of religion are ordinarily sufficient to prevent a person from destroying his own life, and therefore, when the facts proved with reference to death admit equally of the inference that the death resulted from accident or suicide, the presumption is that death was accidental.

As long as the evidence is consistent with the theory of accidental death, the presumption against suicide is controlling. The issue being the fact of suicide, it is for the defendant to prove this ultimate fact by a fair preponderance of the evidence. It starts with the burden of overthrowing the presumption that a person does not voluntarily destroy what is commonly regarded as the most precious of all possessions, life itself. When the fact of death appears, the law presumes that it must have resulted from causes which were not voluntarily brought about by the deceased. Death may result from innumerable causes. The facts of a case may suggest accidental shooting, poisoning or drowning. If the evidence is consistent with the theory of either, the presumption which the law raises from known and recognized controlling forces of human nature requires the conclusion that the death was accidental. If the known facts are consistent with a cause of death which does not involve self-destruction, that cause must be accepted.

After all the hypotheses which are consistent with an innocent or accidental death are eliminated, the conclusion of suicide may then be drawn. The burden is on the defendant to show that the circumstances and conditions are inconsistent with any other reasonable cause of death than that of suicide; that is, it must eliminate and disprove all other causes of death which are consistent with the evidence before the jury is justified in inferring that the deceased committed suicide. The ultimate fact of suicide is thus shown by the proof of certain evidentiary facts which are inconsistent with the theory of accident or natural death, or by proof of the non-existence of facts which would justify the inference of accident. But the ultimate fact is required to be proven by a preponderance of evidence only, and this rule is in no way affected by the subsidiary requirement that the defendant must by its evidence exclude every other reasonable theory for accounting for the death.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

March 30.

1 *New Method of Operation for Epispadias. C. Beck, New York.
2 *Pneumonia, with Special Reference to the Use of Fresh Air and Saline Solution. S. S. Burt, New York.
3 Localization in Multiple Intestinal Obstruction. G. A. Friedman, New York.
4 *Buttermilk as an Infant Food. A. Strauch, Chicago.
5 *Relationship of Clinical Symptoms to Microscopic Findings in Carcinoma of the Uterus. C. O. Thienhaus, Milwaukee.
6 Illustrations for Medical Journals. A. J. Martin, New York.

1. **New Operation for Epispadias.**—Beck describes an operation for epispadias, which he employed successfully in one case. The funnel-like appearance of the urethral orifice over the pubic bone suggested to Beck to dissect the surrounding walls, including the whole urethral gutter, in the same way that a hernial sac including the cord is liberated and mobilized in the radical operation for inguinal hernia. This plan was carried out by making a continuous incision around the funnel as well as the outer margins of the urethral gutter, the aim being then to shell out a coherent canal which is meant to be the new urethra. The steps of the operation are described in full.

2. **Pneumonia.**—The best course to pursue in the treatment of pneumonia, according to Burt, is to secure for the patient repose of mind and body, a simple, but nutritious diet, an unlimited supply of fresh air and sunshine, and such hygienic measures as are necessary to maintain the strength of the patient and to alleviate the severity of symptoms and avert complications as far as possible. He advises promoting the intrinsic capacity of the fluids and cellular elements of the body to overcome the virulence of the infection, and suggests that this may be done by the injection of physiologic saline solution. Care should be observed not to inject more than one dram of the solution to each pound of the body weight, in each quarter of an hour.

4. **Buttermilk as Infant Food.**—Strauch has had excellent results accrue from the use of buttermilk in the feeding of infants. His experience includes more than 20 cases, mostly of malnutrition, resulting from chronic gastrointestinal disturbances, with occasional acute exacerbations up to the intensity of cholera infantum; one case of habitual vomiting (pylorospasm), one case of icterus catarrhalis, one prematurely born child, and some cases of *alaitement mixte*. Some of these cases had not responded to other methods of feeding and treatment.

5. **Carcinoma of Uterus.**—Thienhaus urges careful and conscientious efforts on the part of the general practitioner to diagnose carcinoma of the uterus, resorting to the microscope in dubious cases. He sounds a note of warning against the indiscriminate cauterization of what appear to be simple erosions of the cervix without first confirming the diagnosis with the microscope.

Boston Medical and Surgical Journal.

March 28.

7 *Crusade Against Tuberculosis in Germany. E. A. Locke, Boston.
8 *Diffuse Peritonitis Following Peritonitis in Young Children. H. B. Smith, Boston.
9 *Extraordinary Blood Findings. F. Van Nuys, Massachusetts.
10 *Cervical Adenitis with Reference to Mouth Infection. F. D. Donoghue, Boston.
11 *Primary Ligation of Vas Deferens. G. Walker, Baltimore.
12 Studies in Psychopathology. B. Sidis, Brookline.
13 *Cancer of Vulva. F. W. Johnson, Boston.
14 *Method of Treating Appendicular Stump. C. F. Denny, St. Paul, Minn.
15 The Opsonins in Surgery. J. G. Mumford, Boston.

7. **Crusade Against Tuberculosis in Germany.**—Locke discusses very fully the principles underlying the crusade against tuberculosis now being carried out in Germany. He says that several fundamental considerations, which make such a general movement possible, should be borne in mind: First, the entire kingdom of Germany is under uniform laws, those pertaining to disease and the general health of the people being controlled by a national board of health presided over by a cabinet minister. Through this imperial health bureau a most exhaustive investigation of the existing conditions has been carried out and relief measures promulgated; second, the scientific spirit which permeates German medicine is largely responsible for the effectiveness of this organization in that it has, step by step, pointed the way to success; third, on compulsory insurance against sickness and invalidity has placed at the disposal of the authorities immense funds which could in part be directly applied to the erection and maintenance of sanatoria, convalescent homes, care of the consumptive's family, etc.

8. **Diffuse Peritonitis Following Appendicitis in Children.**—Smith reports seven cases of diffuse peritonitis, following appendicitis, occurring in children, from 3 to 8 years of age, a study of which convinces him that appendicitis in children exhibits certain features not altogether common in adults. Four of these children died. The most striking feature in all of these seven cases was the fact that the pathologic conditions found at operation were out of all proportion to the duration of the illness. In three of the cases, the peritonitis was so extensive as apparently to involve the entire greater cavity, with an average duration of less than 48 hours from the appearance of the initial symptoms. It was a noticeable fact that in five of the cases the perforation in the appendix was large, that is, as great in diameter as a split pea.

9. **Extraordinary Blood Findings.**—The characteristic feature of the blood in the case reported by Van Nuys was the presence of large basophilic phagocytic cells capable of ameboid motion. There were two varieties of these cells. One was a large, mononuclear cell, with granular, fragile, often vacuolated cytoplasm, the nucleus being large, oval or bean shaped, often vesicular, and sometimes containing a pale, yellow-brown nucleolus. The other type was a multinuclear, phagocytic, giant cell, with long fantastic streamers of protoplasm. The patient had suffered from dyspnea, severe constipation, chronic bronchitis and some edema of the feet and bases of the lungs. He had a fairly compensated aortic regurgitation; his liver and spleen were enlarged considerably. In the region of the descending colon were two hard masses, egg shaped, deep and immobile. On the day of his admission to the hospital the patient, a Russian Jew, butcher by occupation, passed nineteen feet of the beef tapeworm after one dose of castor oil. Eggs of *Trichocephalus dispar* were also present in the stools.

10. **Cervical Adenitis.**—A careful study of 300 cases of cervical adentitis leads Donoghue to draw the following conclusions: 1. Enlarged glands of the neck are not, primarily, tuberculous, and bear the slightest relation, if any, to general or pulmonary tuberculosis. 2. They are due to a mixed infection of pus-producing bacilli. 3. They will quickly resolve if the source of the infection is removed before the glandular tissue becomes disorganized. 4. If disorganization takes place, the gland should be poulticed until the gland is practically liquefied. It should then be opened by a stab puncture, emptied and drained by a "Briggs canula." 5. Cases seen late, with a large mass of partially calcified and partially disorganized glands present, call for a thorough and extensive dissection.

12. **Primary Ligation of Vas Deferens Before Operations on Testes.**—An exhaustive study of tuberculosis of the genitourinary organs has convinced Walker that during the excision of a testicle the manipulation necessitated is more than likely to force tubercle bacilli along the healthy vas into the blood or lymph vessels and thus produce a general infection. In order to eliminate this danger Walker advises preliminary ligation of the vas deferens and its accompanying vessels high in the groin. After the testis has been freed in the usual way the vessels should be cut at the point of primary ligation and the cord freed still higher up and gently pulled as far as practicable out of the external ring before it is ligated and cut.

13. **Cancer of Vulva.**—Johnson reports a case of primary epidermoid carcinoma of the labium and vulva, occurring in a woman 69 years of age. The labium, clitoris and three-fourths of an inch of the urethra were removed. For five years the patient remained well. Then the tumor appeared on the opposite labium and it was removed two years later, seven years after the original operation. Nine months after the second operation the patient reported herself in good health.

14. **New Method of Treating Appendicular Stump.**—In the method described by Denny the appendix was freed, the mesoappendix ligated and a purse-string suture applied in the cecum in such a way that two loops are left which, with the two ends at the starting point, divide the circle about the appendix into three equal spaces. A smooth-jawed Ferguson clamp is applied to the appendix, and distal to this clamp the appendix is severed with a thermo-cautery. The stump is inverted and invaginated into the cecum, and the ends of the ligature previously applied are pulled until the loops disappear.

New York Medical Journal.

March 30.

16 *Hodgkin's Disease a Type of Sarcoma. W. B. Coley, New York.
17 *The Cataphoric Table. G. B. Massey, Philadelphia.
18 *What State in Development of Cataract, Particularly Senile Cataract, is the Most Suitable for Its Removal by Extraction. J. E. Weeks, New York.
19 *Pubiotomy. R. C. Norris, Philadelphia.
20 Endemic Neuritis. J. M. Wheate, Boise, Idaho.
21 *Eosinophilia and Trichiniasis. R. Ottenberg, New York.
22 Possible Significance of New Pyloric and Duodenal Lesion in Guinea-pigs Inoculated Subcutaneously with Diphtheria Toxin. W. D. Cannon, Washington.
23 Modern Medicine in China. W. H. Dobson, Washington.

16.—See abstract in THE JOURNAL, Jan. 12, 1907, page 161.

17. **Cataphoric Table.**—Massey describes a cataphoric table which he has devised, and which permits of a perfect control of the 110-volt direct street current in the operating room.

18. **Cataract.**—Weeks divides cataracts into four varieties: 1, Cataracts that form early in life; 2, cataracts which develop by the formation of fissures in the cortex; 3, cataracts in which the opacification appears in the center of the lens, and 4, zonular cataract. Extraction of the cataract in the four types mentioned, if done when most propitious for the welfare of the patient, would be performed by Weeks in the first type as soon as liquor Morgagni appeared between the lens capsule and the lens substance; in the second type, at the convenience of the patient after vision is reduced below that necessary for the ordinary vocations of life; in the third type, when useful vision has been abolished, and the lens is appreciably shrunken; in the fourth type, at the convenience of the patient after vision is reduced below that necessary for ordinary uses.

19. **Pubiotomy.**—Norris reports a case in which pubiotomy was done instead of an elective Cesarean section, with excellent results. Both mother and child lived. Norris says that it seems to him that in the hands of the average surgeon in private practice pubiotomy is safer than Cesarean section.

21. **Eosinophilia and Trichiniasis.**—Ottenberg publishes the histories of eight cases of trichiniasis. Although the presence of trichinæ was demonstrated in only three of the cases, the clinical evidence was sufficiently striking to permit of making a positive diagnosis. The combination of eosinophilia with the other characteristic symptoms, viz., edema of the face, which occurred in six of the eight cases, muscular pains, present in all, though only very pronounced in two, and fever, present in seven cases, makes a clinical picture which could hardly be presented by any disease other than trichiniasis.

St. Louis Medical Review.

December 22, 29 and January 5, 12.

24 Vaccination: A Critical Examination. E. Hubbard, East Aurora, N. Y

March 23.

25 Present Scope of Stomach Surgery. W. Bartlett, St. Louis.
26 Medical Education in German Universities, Other than Berlin. W. C. Gayler, St. Louis.
27 Medical Education in Vienna. L. Rassieur, St. Louis.

Lancet-Clinic, Cincinnati.

March 30.

28 Organization of the Academy of Medicine of Cincinnati. B. Stanton, Cincinnati.
29 Reminiscences of the Academy of Medicine. A. G. Drury, Cincinnati.
30 Sense of Probability in Diagnosis of Disease. B. Holmes, Chicago.
31 Rhinitis. E. S. McKee, Cincinnati.

Military Surgeon, Carlisle, Pa.

March.

32 Tendon Tissue versus Catgut. N. Senn, Chicago.
33 Laboratory Work Aboard Ship. A. W. Balch, U. S. N.
34 *Penetrating Wounds of Abdomen. R. R. Wreden, Russia.
35 *Case of Multiple Gunshot Wounds. L. T. LeWald, U. S. A.
36 *Case of Fracture of the Skull. S. M. Waterhouse, U. S. A.
37 First-Aid Splint Packet. R. Spear, U. S. N.
38 Natural vs. Mechanical Ventilation of Hospitals. P. H. Bailhache, U. S. Public Health and Marine-Hospital Service.

34. **Penetrating Wounds of Abdomen.**—Wreden says that active operative intervention, when admitted by the general condition of the wounded, and the surrounding circumstances, is indicated in all cases of perforating wounds of the abdominal cavity, with the exception of wounds inflicted with the modern small-caliber undeformed rifle bullet. In these cases expectant treatment gives the best results. He emphasizes that all those wounded in the abdomen need full rest, at least for one week after the infliction of the wound. He has found morphin a powerful remedy in facilitating the cure of penetrating wounds of the abdomen.

35. **Multiple Gunshot Wounds.**—LeWald reports the case of a Filipino who was shot four times, at close range, with a regulation Colt's revolver, caliber 38, and was finally stunned by a blow on the forehead by the end of a carbine. The first bullet entered the chest near the right nipple, passed upward, backward and outward, perforated the lung, and made its exit through the back, passing through the outer edge of the right scapula. The second bullet entered the chest near the left nipple, perforated the lung and lodged in the back of the subcutaneous tissues. The third bullet entered the chest near the left shoulder, passed downward and backward, perforated the left lung and lodged in the muscles of the back. The fourth bullet entered the palm of the left hand, passed through the subcutaneous tissues, and made its exit through wound in the anterior surface forearm. The patient was discharged cured at the expiration of 28 days.

36. **Fracture of Skull.**—In the case reported by Waterhouse a very extensive lesion resulted from a comparatively slight traumatism. A man fell down a basement stairs and struck on the concrete floor. Apparently he was intoxicated at the time. He was picked up unconscious, and at the time there was rather free hemorrhage from the left ear. The man died about three and a quarter hours after receiving the injury. A necropsy was made. Large clots of blood were found at both sides of the head, both between the dura and the skull and betwen the dura and the brain. Both cerebral lobes showed punctate hemorrhages. The anterior tips of the frontal lobes were infiltrated with blood. Starting at the region of the occipital protuberance was a V-shaped fracture of some size, and there was also a transverse, jagged fracture across the orbital plate of the frontal bone on both sides and a transverse fracture across the ethmoid bone.

Journal of the Kansas Medical Society, Lawrence.

March.

39 *Mycosis Fungoides. R. E. McVey, Topeka.
40 *Appendicitis. L. Murdock, Sabetha.
41 Electrotherapeutics. U. G. Iles, Seneca.
42 Ambulatory Treatment of Fractures of Lower Limbs. L. W. Shannon, Hiawatha.
43 Major Complications and Treatment of Pneumonia. E. N. Martin, Benedict.

39. **Mycosis Fungoides.**—McVey reports a case of this kind occurring in an infant. The tumors were situated on the left eye and left cheek. On other portions of the body there were circumscribed erythematous patches. The father of the child had had such an eruption over his body when he was an infant, but after his development into manhood the disease disappeared and did not return. The child was given the syrup of the iodid of iron, 5 drops, three times a day, and the oleate of bismuth was applied locally. The Finsen light was also used for 15 minutes each day. The child died three months after coming under observation.

40. **Appendicitis.**—Murdock reports five cases of appendicitis to illustrate that often the only symptoms manifested are the initial pain in the abdomen, elevation of temperature, and increased pulse rate; that is, there is almost a total lack of grave symptoms to justify a laparotomy.

Denver Medical Times and Utah Medical Journal.

March.

44 *Case of Sarcoma. I. B. Perkins, Denver.
45 Appendicitis in Country Practice. A. R. Pollack, Ely, Nevada.
46 *Skin Grafting—Choice of Method. G. F. Roehrig, Denver.
47 Case of Raynaud's Disease. O. M. Shere, Denver.
48 Open-Air Treatment in Skin Grafting. H. G. Wetherill, Denver.
49 *Excision of a Gasserian Ganglion with Use of a Wooden Plug for Control of Hemorrhage. A. H. Williams, Denver.
50 *Treatment of Chronic Rheumatism. E. Stuver, Fort Collins.
51 *Therapy of Rheumatism. W. H. Heisen, Denver.
52 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.
53 Examination of the Infant. F. H. Raley, Salt Lake City.
54 Dislocation of Outer Extremity of Clavicle Treated by Elastic Webbing. E. W. Whitney, Salt Lake City.
55 *Chorea, an Interesting Case. J. U. Giesy, Salt Lake City.
56 *Gummatous Meningitis. W. B. Ewing, Salt Lake City.

44. **Sarcoma.**—Perkins reports a case of small round-celled sarcoma occurring in a woman aged 37, in which a portion of the ileum, the entire cecum and ascending colon, and a portion of the transverse colon were resected. The diagnosis was confirmed on microscopic examination. The patient recovered and has remained well for nine months.

46. **Skin Grafting.**—While Roehrig's conclusions based on his experience are wholly favorable to the employment of the Reverdin grafts, he concedes that there is at least one instance in which the Thiersch flap method is of equal, if not of su-

perior advantage because of improved facility of operation, and that is when a convenient amputation is taking place, either on the same or some other patient and the skin of the amputated limb can be employed advantageously. However, the advantage gained is merely in time saved and not in additional effectiveness in results.

49. **Excision of Gasserian Ganglion.**—In separating the dura from the bone, Williams deliberately tore the middle meningeal artery as it emerged from the foramen spinosum. The hemorrhage, which was profuse, was quickly and absolutely controlled by forcing into the opening a conical plug of wood, previously prepared by repeated sterilization for this particular purpose. This freedom from hemorrhage greatly facilitated the approach and free exposure of the ganglion, which was eventually removed. The operation has given the patient absolute freedom from pain for over a year.

50. **Treatment of Chronic Rheumatism.**—Stuver has found the galvanic current exceedingly beneficial in many cases of chronic rheumatism. He employs a current of from 5 to 20 m.a., applying it from 20 minutes to half an hour. He says that these results can be increased if a thin layer of cotton wet in a solution of cocain be applied over the skin under the positive pole.

51. **Id.**—Heisen considers massage most useful in the treatment of chronic rheumatism.

55. **Chorea.**—Giesy reports a case of chorea that was complicated by marked and persistent tympanitis, a primary eruption, slight meningeal symptoms and endocarditis. The case suggested from time to time mild scarlatina, parasitism, meningitis and chorea. Giesy suggests that perhaps the choreic movements were caused by a toxemia resulting from improper intestinal metabolism.

56. **Gummatous Meningitis.**—Ewing reports a case of this kind occurring in a woman aged 39, twice married, who had four children living, all by the first husband. After her second marriage she aborted many times. About three months after the marriage a sore appeared on the external genitals, which was treated locally with good results. Ten years afterward she manifested symptoms of meningeal disease, such as headache, sleep disturbances, muscular weakness, impaired memory and fleeting paresis, which led to the diagnosis of gummatous meningitis. Under the most intensive antisyphilitic treatment the patient began to improve and continued to improve until she finally disappeared from observation.

Journal of the Missouri State Medical Association, St. Louis.

March.

57 *Deep Rectal Abscesses. J. M. Frankenburger, Kansas City, Mo.
58 *Extrapulmonary Causes of Cough. J. C. Buckwalter, St. Louis.
59 *Treatment of Chronic Joint Disease. M. M. Edmonson, Kansas City, Mo.
60 Neurasthenia, Traumatic and Idiopathic: Its Pathology and Prognosis, D. S. Booth, St. Louis.
61 Pathology of Pelvic Inflammation. T. J. Beattie, Kansas City, Mo.
62 *Eartire as a Factor in Disease. E. H. Musson, Norborne.
63 Causes and Prognosis of Valvular Lesions of the Heart. R. G. Davenport, Trenton.
64 The Joint Medical Council of St. Louis and Municipal Hospital Reform. J. Green, Jr.

57. **Deep Rectal Abscesses.**—Frankenburger reports two cases of this kind and emphasizes the fact that in obscure cases of trouble in the pelvic region the patient should be examined thoroughly and kept under closer observation until a positive diagnosis is made.

58. **Cough.**—Buckwalter discusses the extrapulmonary causes of cough which develop in consequence of pathologic changes in the upper respiratory tract and disturbances in its function. He reports several cases in point.

59. **Treatment of Chronic Joint Disease.**—Edmonson urges early diagnosis, suitable treatment for the individual case, and maintenance of the general health of the patient by means of diet, tonics and hygiene.

62. **Eartire.**—Musson suggests that there may be an analogous condition of fatigue of the auditory apparatus with important reflex manifestations similar to eyestrain. He suggests for this condition the term eartire. Neurasthenia, headache and insomnia, he says, may be caused by maladjustment of the muscles or ossicles, or the long-continued registration of unrhythmical sounds by even a normally adjusted ear may greatly fatigue the cerebral auditory centers and cause the manifestations of symptoms of eartire. [Eartire was discussed editorially in THE JOURNAL, July 8, 1905, page 109.]

Maryland Medical Journal, Baltimore.

65 *Suggestions for Reorganization of Hospital Out-Patient Departments. R. C. Cabot, Boston.
66 Danger of Sending Consumptives to the Country. E. N. LaMotte, Baltimore.

65. **Reorganization of Dispensary Service.**—Cabot's paper is summarized as follows: 1. Dispensary work is part of public health work, and should be done as well as are the examinations made at state and municipal laboratories. 2. To attend to the mass of details on which good treatment depends a nucleus of permanent paid employés is necessary. This paid staff should consist at present of nurses trained for the purpose. 3. These paid employés should understand the physician's directions and see that they are carried out in the patient's home, reporting back to the physician any data concerning the domestic and social conditions which bear on the diagnosis and treatment of cases. 4. Either through these nurses or through social workers on hand daily at the dispensary the hospital should obtain for its patients the full benefit of any resources—moral, educational and financial—which the community affords. This help is especially important in "functional" cases, which make up over one-third of the medical outpatient clinics. 5. Through these means and by the development of mechanical and psychical measures and hydrotherapeutics our dispensaries can be freed from the twin abuses which now limit their therapeutic usefulness: (a) Hurry and consequent makeshift; (b) wholesale drugging.

Bulletin of Johns Hopkins Hospital.

March.

67 *Necessity of a More Uniform Nomenclature of Diseases for Study and Teaching. T. M. Rotch, New Haven.
68 *Acute Leukemia. C. P. Emerson, Baltimore.
69 Benjamin Rush, as Materialist and Realist. L. W. Riley, Baltimore.
70 Multiple Tumors in Dog. E. K. Cullen, Baltimore.

67. **Uniform Nomenclature of Diseases.**—A new classification of diseases of the gastroenteric tract is suggested by Rotch. The diseases are divided into gastric and enteric, and these again into developmental, non-infectious and infectious. The further subdivisions of the non-infectious groups are based, as far as possible, on the origin of the condition, such as mechanical, functional, new growths, traumatism and ulcers. The classification is presented in full as follows:

- Gastric
  - Developmental
    - Malpositions,
    - Malformations . . . . . Pyloric stenosis
  - Non-Infectious
    - Mechanical . . . . . Contraction, Dilatation.
    - Ulcers . . . . . Peptic.
    - New Growths.
    - Functional . . . . . Nervous vomiting, Recurrent (periodic) vomiting, Indigestion
    - Traumatic . . . . . Corrosive gastritis
  - Infectious .. Gastritis

- Gastric
  - Developmental
    - Malpositions.
    - Malformations.
  - Non-Infectious
    - Mechanical . . . . . Dilatation of colon, Volvulus, Intussusception, Hernia, Fissure, Prolapse, Hemorrhoids.
    - New Growths.
    - Functional
      - Incontinence,
      - Constipation.
      - Nervous Diarrhea
      - Indigestion
        - Duodenal.
        - Intestinal
          - Deficient secretion,
          - Fermentation.
  - Infectious
    - Infectious diarrhea
      - Dysentery,
      - Cholera infantum,
      - Other Organisms.
    - Proctitis,
    - Appendicitis,
    - Fistulas.

Intestinal worms.

68. **Acute Leukemia.**—Emerson reports three very interesting cases of acute leukemia: 1. A case of acute lymphatic leukemia, without enlargement of lymph glands or spleen, with localized involvement of the bone marrow, and with very many white cells that were soluble in dilute acetic acid. 2. A case of acute leukemia, resembling a septicemia, with the leucocytes almost all achromatophilic. 3. A case of acute leukemia with leucopenia—aplastic leukemia.

Ohio State Medical Journal, Columbus.

March 15.

71 *Addison's Disease. G. F. Zinninger, Canton.
72 Necessity for Teaching Anatomy, Physiology and Chemistry, as Applied to Medicine A. Ravogli, Cincinnati.
73 Psychotherapy. H. Cushing, Elyria.
74 The Present Overshadowing Problem in Ophthalmology—The Muscle Question. F. K. Smith, Warren.
75 Ocular Gymnastics. W. B. Van Note, Lima.
76 *Muscular Asthenopia and Treatment by Ocular Gymnastics. H. B. Harris, Dayton.
77 Professional Cooperation. Rev. F. Poe.
78 *Relation of Appendicitis to Pregnancy and the Puerperal Period. V. N. Marsh, Flushing.
79 Case of Traumatic Aneurism of Common Femoral Artery Treated by Temporary Occlusion of the Common Iliac and Suture of Rent in Femoral Artery. J. C. Oliver, Cincinnati.
80 Colostomy Pad Which Fulfils Requirements Where Such a Device is Necessary. F. C. Herrick, Cincinnati.
81 Simple Method for End-to-End Vessel Union. F. C. Herrick, Cincinnati.

71. **Addison's Disease.**—Zinninger reports two cases of Addison's disease which terminated fatally. One case met all the requirements of Addison's description, while the other at no time showed any pigmentation, although all the other symptoms of the disease were present. Zinninger calls particular attention to the extreme myosis which was present in both cases.

76. **Ocular Gymnastics.**—Harris emphasizes the fact that although the extraocular muscles may be in a state of perfect balance they may be the cause of serious symptoms and be in great need of help by ocular gymnastics.

78. **Pregnancy and Appendicitis.**—Marsh reports the case of a woman who, three months prior to the birth of her first child, suffered from a severe attack of appendicitis. She recovered and was delivered of a healthy child at term. She had a second confinement, two and a half years later, without trouble. Fifteen days after her third confinement she manifested all the evidences of puerperal infection. Irrigation failing to give relief, she was operated on. The appendix, distended with pus, was found attached to the right horn of the uterus and overlying a large suppurating tube and ovary. The apppendix and the right appendages were removed. The patient recovered.

Journal of Nervous and Mental Diseases, New York.

February.

82 *Herpetic Inflammations of the Geniculate Ganglion. J. R. Hunt, New York.
83 *Brain Tumor Symptom-Complex with Termination in Recovery. H. H. Hoppe, Cincinnati.
84 *After-care and Prophylaxis and the Hospital Physician. A. Meyer, New York.
85 *The Insane Commission of the St. Louis City Jail, An Experiment in Civic Medicine. S. I. Schwab, St. Louis.
86 Consciousness in the Brutes. G. V. N. Dearborn, Boston.

March.

87 *Migraine and Hemianopsia. J. J. Thomas, Boston.
88 *Peripheral Facial Diplegia and Palatal Involvement. G. W. Jacoby, New York.
89 Study of the Sensory Symptoms of a Case of Pott's Disease of Cervical Spine. F. R. Fry, St. Louis.
90 *Hemilingual Atrophy of Traumatic Origin. S. E. Jelliffe, New York.

82. **Herpetic Inflammations of Geniculate Ganglion.**—Hunt brings together three separate groups of cases which he believes constitute a new and distinct clinical entity. The pathology of the affection is identical with that of herpes zoster, of which it forms a part, the distinguishing features of the clinical picture depending entirely on the ganglion involved and the nature of the structures surrounding it. Hunt believes that the geniculate ganglion may be the seat of the herpetic inflammation. The clinical types of the affection are herpes auricularis, herpes auricularis with facial palsy, and herpes auricularis with facial palsy and auditory symptoms. The zoster zone for this ganglion is found in the interior of the auricle and in the external auditory canal. Hunt reports two characteristic cases in full.

83. **Brain Tumor Symptom-Complex.**—That conditions other than brain tumor may cause symptoms, general as well as focal, simulating brain tumor is shown by Hoppe, who reports three cases. One of his patients died of pulmonary tuberculosis after having been under observation for 10 years for a supposed cerebellar tumor. At the necropsy the brain was found to be normal in every respect. The examination of the brain included macroscopic as well as microscopic study. There were no adhesions or any other lesion of brain or membranes. Two patients are alive and well after two years and thirteen and a half years respectively. In these two cases the symptoms also pointed to brain tumor and the diagnosis was made accordingly. Therefore, Hoppe urges that clinicians should not be too pessimistic in their prognosis of brain tumors, especially in the cerebellar cases, and that they should not be too hasty in the recommendation of surgical intervention until therapeutic measures have been given a long and thorough test.

84. **After Care of the Insane.**—Meyer gives a brief report on a movement which was inaugurated in New York state for the purpose of the after care of needy persons discharged from hospitals for the insane.

85. **Experiment in Civic Medicine.**—Schwab outlines the main purposes underlying the organization of a commission in St. Louis whose function it is to cultivate a better standard of expert medical testimony and to train a group of experts in mental questions for service in the courts. The central idea of the experiment is that all expert testimony should be given on the question at issue and should have nothing whatever to do with one side or the other in the actual legal test of a case. In other words, it should be the expert's duty to inform the court on questions of the proper interpretation of facts lying within the limits in which expert knowledge is required. The commission consists of four members, and its report is transmitted to the circuit attorney, who, with the assistance of two judges in the criminal courts, appoints the commission. The commission has no legal or official position and exists merely as a matter of convenience to the court. The report of the commission is without bias or prejudice.

87. **Migraine and Hemianopsia.**—Whether attacks of migraine, in the absence of disease of the vessel walls, are capable of producing permanent changes in the nervous structures is the point discussed by Thomas. As the result of careful study of several cases he concludes that attacks of migraine may result in an area of softening in the brain, which shows itself by a permanent paralysis, aphasia, or hemianopsia, and that in most instances this is due to the attack favoring a vascular lesion in persons who have already disease of the walls of the blood vessels, but that in certain cases the vascular lesion may occur in young persons whose blood vessels are in all probability in a normal condition. In all cases of organic disease of the brain, coming on during an attack of migraine extreme caution is necessary before ascribing even an exciting rôle to the migraine, as it is much more common to find independent organic disease of the blood vessels which would account for the organic disturbance in persons who have suffered from migraine, yet a few cases remain which can hardly be explained in this way, and justify the statement made by Charcot and others that the transient hemianopsia or aphasia seen occasionally in this disease may become permanent.

88. **Peripheral Facial Diplegia with Palatal Involvement.**—Jacoby reports four cases under his observation, three of which showed palatal palsy.

90. **Hemilingual Atrophy.**—Jelliffe reports a case of simple hemilingual atrophy due to injury to the hypoglossal nerve at its exit from the skull.

Therapeutic Gazette, Detroit.

March 15.

91 Fractures of Femoral Neck—Anatomic Treatment. C. E. Ruth, Keokuk, Iowa.
92 Treatment of Arthritis Deformans. J. H. W. Rhein, Philadelphia.
93 New Substitute for Iodoform. J. H. Ford, Indianapolis.
94 Therapeutic Value of Arhovin. E. R. W. Frank, Berlin.
95 Specific Medication in Treatment of Tuberculosis. J. Sawyer, Asheville, N. C.

96 Treatment of Coryza. E. S. McKee, Cincinnati.
97 Directions for Determining Opsonic Index of Blood. E. C. L. Miller, Detroit.

St. Louis Courier of Medicine.
March.

98 Operations for the Cure of Chronic, Suppurative Otitis Media Other than Radical Mastoid. S. Spencer, St. Louis.
99 Cerebral Syphilis with Coma. M. J. Lippe, St. Louis.
100 Treatment of Gonorrheal Ophthalmia Neonatorum. W. A. Shoemaker, St. Louis.

Medical Fortnightly, St. Louis.
March 11.

101 Seeing Turkey with Medical Eyes. R. G. Eccles, Brooklyn.
102 President's Address, of the Quincy, (Ill.) Medical and Library Association. J. Robbins, Quincy.
103 Suprapubic Cystotomy as Preliminary to and the Route for Performance of Prostatectomies. W. T. Elam, St. Joseph.

Virginia Medical Semi-Monthly, Richmond.
March 8.

104 Pathologic Aspects of Genius. L. G. Pedigo, Roanoke.
105 Surgical Treatment of Diseases of the Stomach. J. S. Horsley, Richmond.
106 Clinical Considerations of Frontal Sinuses. W. A. Wells, Washington, D. C.
107 Value of Blood Examination in Diagnosis. D. Vanderhoof, Richmond.
108 Abdominal Surgery and the Ohio Valley. R. Carothers, Cincinnati.
109 Principles of Surgery. S. McGuire, Richmond.

Medical Standard, Chicago.

110 Operative Treatment of Femoral Hernia. A. De Roulet, Chicago.
111 Practical Roentgen-ray Therapy. N. M. Eberhart, Chicago.
112 Psychoses and Neuroses of Urethral Origin. N. E. Aronstam, Detroit, Mich.
113 The Mouth and Its Dangers. I. Irwell, Buffalo, N. Y.
114 The Sigmoid Flexure and Mesosigmoid. B. Robinson, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional interest.

British Medical Journal.
March 16.

1 *Thoracic Aneurism. T. Oliver.
2 *Aortic Disease. G. Rankin.
3 *Surgical Aspects of Hemophilia. E. W. H. Groves.
4 *Heart; Anomaly of; Cor Triloculare Biatriatum. J. D. Mann.
5 *Calcium Salts as Cardiac Tonics in Pneumonia and Heart Disease. L. Brunton.
6 *Delayed Chloroform Poisoning. J. C. Renton.
7 *Chronic Peritonitis Causing Elephantiasis. J. Bernstein and F. W. Price.
8 *Relation of Diet to Thyroid Activity. A. D. Fordyce.
9 *Class Incidence of Cancer. D. Heron.
10 *Insanity, Its Causes and Increase. G. H. Savage.

1. **Thoracic Aneurism.**—Oliver discusses the clinical history of this condition, which he believes is in at least 50 per cent. of the cases due to syphilis. Other causes mentioned are sudden strain and injury, alcohol, and previous disease of the vessel walls. Rest in bed and quietude, together with a restricted diet, are mentioned as essentials in the treatment. Iodid of potassium is said to give great relief, but does not produce a cure. Speaking of galvano-puncture, Oliver says that in one case of subclavian aneurism thus treated, the result was satisfactory, until, as the result of friction, the aneurism redeveloped and burst into the surrounding tissue.

2. **Aortic Disease.**—Digitalis in combination with nitroglycerin is recommended very highly by Rankin in the treatment of aortic disease. He says that the nitroglycerin prevents increase of peripheral resistance and so robs the digitalis of that influence on the arterioles on account of which its administration is supposed to be contraindicated. Rankin is a firm believer in the efficacy of digitalis in the treatment of aortic disease when compensation has failed.

3. **Surgical Aspects of Hemophilia.**—Rest and pressure are said by Groves to be the two essentials in the treatment of hemophilia from a surgical point of view. When the joints become swollen they should be bandaged firmly, and kept at rest until the effusion subsides. It is by neglect of this treatment that the ligaments become stretched and weakened, and the changes of osteoarthritis hastened. Groves reports three cases of hemophilia which illustrate the hereditary nature of this affection. In two of the cases, ischemic paralysis resulted from the disease.

4. **Anomaly of Heart.**—The patient whose case is reported by Mann was 35 years of age, and presented the usual appearance of one suffering from chronic heart disease. The area of cardiac dulness was increased; the cardiac impulse was more extensive than usual, and the apex beat was difficult to locate. There was no thrill. The first sound was replaced by a loud, rushing, systolic murmur, which extended over the whole cardiac area. The center of the impulse was about the fifth interspace, a little within the nipple line. The heart beats were tumultuous and irregular; the veins were overfilled, and those in the neck pulsated. There was intense dyspnea and cyanosis with general edema and effusion into the serous sacs. The patient died. At the necropsy it was found that the heart had only one ventricle from which emerged two arterial trunks, and into which opened the mitral and tricuspid orifices, all in their normal positions. The auricular portion of the heart presented nothing abnormal, except that the foramen ovale was patent. The heart weighed 28 ounces. The man had never been cyanosed until the last three weeks of his life, and he had never been ill in bed until his final illness. When a boy, he had had attacks of breathlessness, cough or headache, which lasted for a day or two. He was unable to join much in boys' sports.

5. **Calcium Salts as Cardiac Tonics.**—Brunton believes that the free use of calcium salts has a tonic action on the heart in cases in which there is a tendency to cardiac failure. He has given calcium chlorid in doses of from five to ten grains, dissolved in water, every four hours, with most excellent results in cases of impending cardiac failure in pneumonia. The disagreeable saline taste of the salt is covered by one minim of the elixir of saccharin, containing 1/20 of a grain of saccharin, for each ten grains of calcium chlorid. The mixture is given in water or milk and is said not to interfere with the use of other remedies. The salt has also proved efficacious in cardiac disease, when the ventricular wall appeared to be losing power. In such cases, the lactophosphate or glycerophosphate of calcium may be employed.

6. **Delayed Chloroform Poisoning.**—Renton reports two cases in which symptoms of delayed chloroform poisoning were observed in adults, four days after the administration of the anesthetic.

7. **Chronic Peritonitis Causing Elephantiasis.**—Bernstein and Price report a case of general anasarca, edema and elephantiasis, the result of a chronic peritonitis. At the necropsy, there was found prominent perihepatitis, perisplenitis and prevertebral fibrosis surrounding the lymphatics at about the level of the receptaculum chyli. Below this, was a varicose condition of all the lymphatics and edema and hyperplasia of the parts drained by these affected vessels, but not of the mesenteric lymphatics or lacteals.

8. **Diet and Thyroid Activity.**—Fordyce carried on a series of experiments on rats, with a view to ascertaining whether or not diet had any effect on thyroid activity. The diet given consisted of: (1) Bread and milk; (2) fresh milk; (3) the same milk pasteurized; (4) the same milk boiled for thirty minutes. In all cases an unlimited supply was given. Fordyce found that the variations in the series of glands examined corresponded with the differences in the diet. In the milk-fed rats the gland vesicles were large and well filled with colloid material. The lining cells were small, with deeply stained nuclei. In the glands of the bread-and-milk-fed rats, the vesicles were very markedly smaller and the amount of colloid present very considerably less. The lining cells were columnar.

9. **Class Incidence of Cancer.**—Heron says that there is always a substantial correlation between the cancer death rate and social status; that is, the incidence of cancer is most heavy among the well-to-do classes.

10. **Insanity.**—Savage claims that there is no such disease as insanity; that it is a negation, and depends more on the social than on the medical conditions; that certain forms are due to direct brain decay, others to brain intoxication, and others to morbid habit or morbid surroundings, or are the

natural but morbid mental growths occurring in certain unstable individuals.

The Lancet, London.

March 16.

11 *Acute Infective or Toxic Conditions of the Nervous System. E. F. Buzzard.
12 *The Renal Function in Its Relation to Surgery. J. W. T. Walker.
13 Diagnosis and Localization of Cerebral Tumors. C. E. Beevor.
14 *Insanity with Special Reference to Prognosis. A. R. Urquhart.
15 *Medical Treatment of Congenital Pyloric Stenosis. G. A. Sutherland.
16 Tertiary Syphilitic Fever and the Visceral and Other Changes Connected With It. E. P. Weber.
17 *Survey of 170 Cases Clinically Diagnosed as Colle's Fracture. R. Morton.
18 Use of Aceto-Salicylic Acid in Rheumatic Endopericarditis. E. C. B. Ibotson.
19 Rôle of Blood Plasma in Disease. H. Campbell.

11. **Infective or Toxic Conditions of the Nervous System.**—The following deductions are made by Buzzard from his investigations:

1. Organic and inorganic substances when present in the lymph spaces of nerves tend to be carried centralward toward the spinal cord and meninges, and especially through the posterior spinal roots. 2. Entry into the spinal cord is made chiefly along the various septa within the lymph channels of the radial vessels and along the anterior but more particularly the posterior roots. 3. The same substances within the spinal cord and its membrane appear to travel upward mainly between the meninges and along the central canal. 4. The changes within the cord resulting from its bacterial or toxic infection through these lymph channels are somewhat patchy and irregular, affecting the gray and white matter alike, with a special incidence on the posterior columns. 6. The morbid histologic processes consist of toxic changes in ganglion cells, blood extravasations, small round cell infiltration of the tissues and perivascular sheaths, some proliferation of neuroglia cells, and parenchymatous degeneration of the nerve strands.

12. **Renal Function and Surgery.**—In this, the first lecture on this subject, Walker takes up the estimation of renal function. He says that as a measure of the total renal function the phloridzin and methylene blue tests are most trustworthy. The phloridizin method is open to the objection that it is too easily influenced by slight variations in the renal function. At present the methylene blue test is the method by which most trustworthy information can be obtained and appears to form a valuable addition to the clinical methods of estimation of the renal function.

14. **Insanity.**—Urquhart says that prognosis in insanity must proceed on a wide and careful review of the whole circumstances affecting the individual, who is in a degenerative condition physically and therefore mentally. All that goes to make up that degenerative condition must be separately investigated and summed up. The elements of prognosis are analytical and synthetical, and it is determined by the nature of the degree of the involvement of the organism in the widest sense. If all the functions are involved, if the degenerative process is universal and intractable, the future of the individual is desperate indeed; if the defect is partial and amenable to treatment naturally the case is more hopeful as these limitations of involvement decrease.

15. **Medical Treatment of Congenital Pyloric Stenosis.**—Sutherland discusses the treatment of congenital pyloric stenosis by means of dieting and gastric lavage, and reports three cases that have come under his care, in two of which the treatment proved successful. In the third case it became necessary to resort to stretching of the pylorus, but the patient died.

17. **Colle's Fracture.**—Morton made a very careful radiographic study of 170 cases of what was diagnosed clinically as Colle's fracture. In 155 cases the radius only was fractured; the ulna in 2 cases; both bones in 7 cases; the trapezium in 1 case; no fracture detected in 5 cases; dislocation of wrist joint complicating fracture in 3 cases; fracture communicating with the wrist joint in 25 cases; fracture of the styloid process of radius in 20 cases, of the ulna in 88 cases; separation of one or both epiphyses in 11 cases.

British Journal of Children's Diseases, London.

February.

20 *Hematuria in Infants and Young Children. J. P. Parkinson.
21 Alcoholic Cirrhosis of Liver in Children. E. Jones.
22 *Congenital Symmetrical Sinuses of Lower Lip. H. S. Clogg.

20. **Hematuria in Infants.**—Parkinson reports a case of infantile scurvy in which hematuria was the only obvious sign of the disease, although on closer examination other signs were discovered. In another case, a congenital renal tumor caused hematuria, while in a third, hematuria followed scarlet fever. In the latter case Parkinson found dry cupping over each kidney of great value in checking the hemorrhage.

22. **Congenital Sinuses of Lower Lip.**—The child, whose case is reported by Clogg, was born with a severe degree of bilateral hare-lip and cleft palate; the premaxilla stood out prominently. The latter was broken and bent backward, and the upper lip repaired over it. The interesting condition was, however, seen on the lower lip. On the upper surface of this lip on either side of the middle line was a papilla; the two papillæ were symmetrical, and surrounding them in the form of a semicircle on the aspect toward the mouth was a groove, and leading from this furrow was a sinus, which passed downward into the lip for about a quarter of an inch. The two sinuses ended blindly, converging slightly, and were situated immediately beneath the mucous membrane of the lip. Issuing from the sinuses was a mucoid secretion.

The Practitioner, London.

March.

23 Diagnosis and Treatment of Infective Throat Conditions. M. Young.
24 *Sphincteric Control of Male Bladder and Its Relation to Prostatectomy. C. A. Ball.
25 *Hemoptysis and Its Treatment. P. S. Hichens.
26 *Cesarean Section. A. J. Wallace.
27 *Postpartum Hemorrhage. E. H. Tweedy.
28 Embolism. A. Hall.
29 *Antiseptic Action of Metallic Sutures. C. Leedham-Green.
30 Measurement of Neck of Femur. J. H. Pringle.
31 *Physical Methods of Treating Heart Disease. A. G. Bennett.
32 Diseases of Stomach. F. C. Moore.

24. **Sphincter in Control of Bladder and Prostatectomy.**—It is well known that after prostatectomy, the control of micturition is usually somewhat abnormal at first, but quickly becomes apparently normal. Ball thinks that this is probably owing to the compensatory powers of the compressor urethræ muscle. He says that whether or not the internal sphincter of the bladder acts after suprapubic prostatectomy is a point which must be ascertained by necropsies on patients some years after the operation. But it seems quite incorrect to argue, he says, from operations on patients with enlarged prostates, that the chief sphincter of the bladder normally lies in the membranous urethra.

25. **Treatment of Hemoptysis.**—Hichens advises putting the patient to bed in a cool, airy room, in a propped-up position, giving him an injection of morphin, letting him have some turpentine to inhale, and reassuring him of a favorable outcome. The patient should be put on a calcium chlorid mixture, have his bowels kept well open by a saline purgative, have a cool and partly dry diet, and ice to suck to relieve thirst. If the hemoptysis is persistent, or recurrent, Hichens would use nitroglycerin.

26. **Cesarean Section.**—Wallace has done a Cesarean section sixteen times, the indication for interference being deformity of the pelvis in 13 cases and obstruction by tumors in three cases. The 13 operations for pelvic deformity were performed on nine women, six of whom underwent section once, two twice, and one thrice. In the three cases, in which tumors formed the obstacle to delivery, obstruction was offered by advanced carcinoma of the cervix of the uterus in one case, by a large intraligamentous fibroid in another, and by a dermoid cyst of the left ovary in a third. Of the 16 operations, one resulted fatally to the mother, so that the maternal mortality was 6.25 per cent. All the children were delivered alive, but one survived only a few hours. The maternal fatality was due to sepsis, the result of several attempts at delivery before Cesarean section was done.

27. **Postpartum Hemorrhage.**—Tweedy subscribes to the efficiency pressure exerted on the abdominal aorta as a means of temporarily controlling postpartum hemorrhage.

28. **Embolism.**—Hall discusses multiple embolic aneurisms and fatal pulmonary embolism, citing cases in illustration.

29. **Antiseptic Action of Metallic Sutures.**—In the case of the majority of the metals tested by Leedham-Green as to their antiseptic action, the presence of a wire loop in gelatin inoculated with the staphylococcus aureus seemed to have little or no influence on the growth of the micro-organism. On the other hand, it was evident that some of the metals had a distinct and powerful inhibitory action on the growth of the germ. In these cases, the culture medium in the immediate neighborhood of the wire loop remained free from bacterial growth, thus forming a clear, transparent halo about the metal ring. Gold, platinum, tin, magnesium, nickel, lead, silver and aluminum were found to possess practically no inhibiting power. Iron exhibited a variable action, dependent on whether oxidation was favored or hindered. If no oxidation took place, then no inhibitory action could be detected; when there was free oxidation, the inhibitory action was decided. By far the most powerful of the metals, bactericidally, proved to be copper, and in a less degree (according to the percentage of copper used in their composition), its alloys, bronze and brass. Similar experiments were made with screws and nails, and the results were the same as in the case of the wire.

31. **Methods of Treating Heart Disease.**—In this, the third paper of the series, Bennett discusses the matter of diet, what to eat, how to eat, and how to prepare properly what we eat.

Dublin Journal of Medical Science.

March.

33 *Treatment of Gastric Ulcer. J. Little.
34 *Treatment of Non-malignant Gastric Ulcer. C. Ball.
35 *Gastric Ulcer: Its Diagnosis and Treatment. J. A. Lindsay.
36 *Treatment of Gastric Ulcer from Surgical Standpoint. A. B. Mitchell.

33. **Treatment of Gastric Ulcer.**—Little says that during his practice before gastric ulcer was made a disease for surgical intervention, all his knowledge of the appearances of gastric ulcers was gained by seeing them in cases which had become fatal from perforation. In other words, he can not recollect a case in which gastric ulcer ended fatally either by gradual exhaustion, or by hemorrhage. He says that with some exceptions the remedy for gastric ulcer is confinement to bed. Diet and medication are of some importance, but the kind will vary with the individual case. Little says that doubt as to the value of surgery in the treatment of bad stomachs has been somewhat suggested by the fact that of late years a few people have consulted him for stomachs which still gave them great trouble, and when noting the principal signs he found that there was a scar, five inches long, in the linea alba.

34. **Treatment of Non-Malignant Gastric Ulcer.**—Ball urges that all cases of uncomplicated gastric ulcer which have had a reasonable trial of treatment by rest and limited diet without very marked improvement, should be subjected to gastroenterostomy. He prefers the posterior operation.

35. **Gastric Ulcer.**—Lindsay says that the physician should recognize that the intervention of surgery in the treatment of gastric ulcer has been of great value, and that he should be careful not to postpone too long his appeal for assistance to a surgical colleague. He should seek that assistance in most, if not all, relapsing and chronic cases. On the other hand, the surgeon should recognize that his assistance is required only in a minority of such cases; that a full, and even patient trial of medical measures is always the first duty, and that he should be chary of mere exploratory operations.

36. **Id.**—In Mitchell's opinion, exploratory operation is an unscientific proceeding. He says that there should always be some definite diagnosis, and that operations should be undertaken with a deliberate object in view. It is wrong to open the abdomen, to see whether it ought to have been opened. He thinks that a properly performed gastrojejunostomy may be relied on to cure 90 per cent. of the patients, and that those in whom failures occur will be found to have some other ailment militating against success. He says that after a fair trial of medical treatment without satisfactory results, operation should be considered before the health of the sufferer is undermined and the stomach so deformed or adherent as to require some elaborate and dangerous surgical procedure.

Semaine Médicale, Paris.

37 (XXVII, No. 7, pp. 73-84.) *Torsion of the Great Omentum. (Torsions du grand épiploon.) F. Lejars.
38 (No. 9, pp. 97-108.) *IsThere Such a Thing as Acute Dilatation of the Heart? (Existe-t-il une dilatation aigue du coeur?) L. Cheinisse.
39 *In What Conditions Has a Physician the Legal Right to Employ a New, Non-authorized Serum. (Droit d'employer un sérum nouveau non autorisé.)
40 (No. 10, pp. 109-120.) *Decapsulation of the Kidney in Treatment of Eclampsia. (Décapsulation du rein dans l'éclampsie.) R. de Bovis.
41 (No. 11, pp. 121-132.) *Importance of Arterial Hypertension in Diagnosis and Prognosis of Eclampsia. (Ecl. puerp. et tension artérielle.) H. Vaquez.

37. **Torsion of the Great Omentum.**—Lejars reports what he thinks is the first case of volvulus of the great omentum diagnosed before operation. In the 66 cases on record, he says, the volvulus occurred in the majority with a right inguinal hernia, in others with an empty hernia or without hernia. His patient was a man of 37, sent to the hospital on a diagnosis of appendicitis at the eleventh day. He had had right inguinal hernia for 20 years, kept under control with a truss, and was suddenly seized with colic and diffuse pain throughout the abdomen, vomiting and slight rise in temperature. There was no constipation, and the pain finally settled in the right iliac fossa and flank. A large rounding mass could be palpated in the right half of the abdomen, extending from the crural arch to above the umbilicus. It was doughy, slightly nodular, nowhere fluctuating, and palpation was uniformly painful. Below, the tumor seemed to be connected with the contents of the hernia by a thick cord crepitating a little under the finger but not tender. There was dulness over the entire region occupied by the tumor and the hernia. By this time there were no reactions, no nausea, stool was apparently normal and temperature only slightly above normal. The connection between the hernia and the mass in the abdomen and the comparative mildness of the symptoms suggested the diagnosis of volvulus of the great omentum, which was confirmed by the operation. The part of the omentum involved in the hernia was twisted and again, close to the transverse colon, where the entire mass had twisted three times on its axis. The torsion at this point was readily corrected and the mass was cut away just above. The appendix was adherent to the mass and was removed with it. The wound was sutured over two small drains and the patient rapidly recovered. A hernia offers favorable conditions for the development of volvulus of the omentum, even if the hernia becomes spontaneously corrected in time, although seven cases are on record in which the torsion was entirely intra-abdominal, with no tendency to hernia. This group includes Stewart's case, published in THE JOURNAL, March 19, 1904. The evolution of a volvulus of this kind is generally slow, and the reactions mild, but nevertheless the condition is a grave one and may terminate in gangrene or complete detachment of the omentum from rupture of the twisted pedicle. In the 66 cases on record seven of the patients died. It is wise to operate at once when the condition is recognized, as adhesions grow constantly more numerous and harder to detach. It is also wise to examine the omentum up to the transverse colon, as there may be torsion at more than one point. In von Eiselsberg's case the volvulus in the hernia was resected, but at autopsy it was found that the omentum was twisted at three other points above, not suspected at the operation. He states that the entire "tumor" must be removed into sound tissue, even if it requires the ablation of the whole of the omentum.

38. **Acute Dilatation of the Heart.**—Cheinisse discusses whether or not it is possible for a sound heart in a healthy person to become suddenly dilated as a result of overexertion and then to subside rapidly again to normal. He reviews the recent literature on the subject of physical exertion and its effects on the heart as studied by various measures, including

radioscopy, and concludes that the evidence is rather against the possibility of physical exertion producing acute dilatation of a sound heart in healthy individuals. On the other hand, the evidence shows that this is liable to occur in case of sudden emotional stress, especially in neurasthenics. Cheinisse has already demonstrated that emotional stress, intense anxiety, is able to induce the development of acute organic affections of the nervous system, and he thinks that somewhat the same mechanism explains the acute dilatation of the heart observed in apparently healthy individuals. Marmorstein reported last year two such cases caused by the rioting at Odessa. The patients were Jews, and the emotional shock at the spectacle of murder and pillage in their homes induced acute dilatation of the heart, which subsided after a few hours. Both of these patients had a history of neurasthenia. The cases resemble those related by Kress in which acute dilatation of the heart was observed in two neurasthenics in the course of transient psychic disturbances. The emotional stress acts on the vasomotor nerves, the arterial spasm inducing a hypertension which reacts on the myocardium. It is also possible that the moral shock has, further, a direct action on the centers regulating the innervation of the heart. The suddenness of the moral shock annuls the power of adaptation which protects the heart against physical overexertion under the circumstances.

39.—See news item in THE JOURNAL for March 16, page 958.

40. **Unilateral Decapsulation of Kidney in Treatment of Eclampsia.**—De Bovis adds another to the five cases of eclampsia of which he has knowledge in which Edebohls' technic of decapsulation of the kidney was applied. His patient was a frail young woman with traces of albuminuria when she entered the hospital in labor at term. Four hours after 10 hours of labor and normal delivery, eclamptic convulsions occurred and returned about every hour, with 17 spasms in all between 9 a. m. and 6 the next morning. At this time the patient was still unconscious and extremely restless, with incontinence of urine, pulse 90, the lungs slightly congested, the face moderately cyanotic. The operation of decapsulation according to Edebohls' technic was performed at 10 a. m. on one kidney; consciousness returned by 5 p. m. and recovery was soon complete. This is the first case of unilateral decapsulation in eclampsia on record. In this case and in two others there were no signs of "renal glaucoma," as the condition of extreme congestion and hypertrophy of the organ has been aptly called. The kidney was smaller than usual, with a large ecchymosis on the convex side. There was not the least tendency to hemorrhage, so that the benefit could not have been due to loss of blood. The aim is to aid the functioning of the kidneys and an operation on one kidney alone might be sufficient, as in the case reported. De Bovis is inclined to believe that nephrotomy should be reserved for the cases with anuria or extreme oliguria. He cites Büttner's statistics, taken from the midwives' register in Mecklenburg, showing the mortality in 509 cases of eclampsia: During pregnancy, 4.5 per cent. of 22 cases; during labor, 24.4 per cent. of 323 cases, and after delivery, 30.4 per cent. of 164 cases. These figures justify intervention, he thinks.

41. **Eclampsia, Result of Arterial Hypertension.**—Vaquez reviews the various theories in vogue in regard to the etiology of eclampsia and points out their fallacies. None of them, he says, has taken account of the main and essential feature of eclampsia, the arterial hypertension, which he regards as the essential symptom, testifying to vascular disturbances whose existence and importance have heretofore been disregarded. Lesions in the liver or kidneys are not constant, and, when present, are the result of the disturbances which they are supposed to explain. The origin of the hypertensive vascular spasms which are the essence of the eclampsia, causing the convulsions and the modifications in the viscera, is still a mystery. The most plausible hypothesis ascribes it to some disturbance in the vascular glands, the thyroid, suprarenals or chromophile glands, which regulate the arterial pressure and which have such an important influence on the genital sphere in women (puberty, menstruation and menopause). During the last 10 years he has been studying the arterial pressure in cases of eclampsia, and with the Basch-Potain sphygmomanometer has always found it from 10 to 14 cm., mercury, higher than normal. When the sphygmomanometer reveals a great increase in the arterial tension the convulsions are not long in making their appearance. If the tension persists high, further trouble may be anticipated. The hypertension does not depend on the convulsions, but precedes them. In one case a woman had apparently recovered from puerperal eclampsia a month before, but intense headache and maniacal excitement persisted. The arterial tension remained high—23 cm.—and in a few days the patient died in delirium, after a few terminal convulsions. Another patient who had exhibited only symptoms of impending eclampsia, with persistent high arterial tension, succumbed three weeks later to sudden meningeal hemorrhage, complaining in the interim only of recurring headache. In cases with a favorable prognosis, the arterial tension rapily subsides nearly or quite to normal, with a few transient rises at times. The patient may succumb after the arterial tension has returned to normal and all convulsions have long ceased, as the extremely high tension may have induced irreparable lesions at some point.

The practical conclusions of Vaquez' long article are that it is necessary to examine the blood pressure as systematically as the urine in case of threatening eclampsia, both for diagnosis and for prognosis. He affirms positively that eclamptic convulsions will never be encountered in women with normal arterial tension, while they may be apprehended whenever the arterial tension is found unusually and persistently high. There is no hypertension, he states, in physiologic pregnancy and parturition. Among the signs of hypertension are the accentuation of the second aortic sound and dilatation of the arch of the aorta. Percussion may also disclose dilatation of the left ventricle, and examination of autopsy records will show that hypertrophy of the left ventricle is frequently encountered in eclampsia. Both this and the dilatation of the aorta do not appear until the hypertension has lasted for some time, consequently they generally indicate, when found, that the hypertension has long preceded the vascular spasms and the eclampsia. In one case a woman had a pressure of 25 cm. when she entered the maternity and eclampsia was apprehended. Delivery occurred the next day, followed by eclampsia which soon terminated in fatal coma. Sometimes the high arterial tension is accompanied by amaurosis, tetany, mania or the like, without actual eclamptic spasms, although the tension may be at 25 or 27 cm. On the other hand, a tension of only 18 or 19 may coincide with true eclampsia, but it generally rapidly subsides in this case and the tension drops gradually to normal (13 or 15 cm.).

The modifications in the heart and vessels noted in impending or established eclampsia are not peculiar to this affection. They are encountered likewise in uremia, especially in the form with convulsions, and in lead colic even when there is no suspicion of kidney trouble. The modifications in the vascular system and heart are merely the expression—equally significant in eclampsia, convulsive uremia and lead colic—of the abnormally high arterial tension. Sudden and rapidly subsiding amaurosis, certain forms of tetany, the maniacal delirium of pregnancy and after parturition, and the cases of "eclampsia without convulsions," are all links in the chain of eclampsia, all depending on the arterial hypertension. In eclampsia these various manifestations may all be crowded into a few hours, while in uremia they may string along through months and years. There is no other affection, Vaquez adds, accompanied by such high arterial tension as eclampsia, and there is no other which is so habitually characterized by hemorrhagic phenomena.

Toxic or infectious processes have been supposed to be responsible for the hemorrhagic foci, but Vaquez thinks that they are explained much better by mere mechanical conditions. When the arterial pressure rises in a few days from 14 to 26 or 28 cm., actually doubling, the only cause for wonder is that the vessel walls do not rupture even more frequently. This is probably due to the fact that eclampsia generally occurs in young women with sound vessel walls, able to stand considerable strain. When rupture does occur, the

amount of blood that escapes is usually in proportion to the degree of arterial tension. What he calls "meningeal epistaxis" is extremely frequent in eclampsia, revealed by the presence of red corpuscles in the cerebrospinal fluid even when there is no copious hemorrhage in the membranes. Ménétrier has recently reported a case of lead poisoning with convulsions in which the blood pressure measured 27 cm., without a trace of organic lesions to be discovered at autopsy. Vaquez believes that nothing but mechanical conditions will explain the sudden onset of the kidney disturbances in eclampsia, their intensity and the rapid return to normal—this "eclipse of the kidneys," as he calls it. In one case reported, the urine contained 0.5 gm. of albumin the first day; 62 gm. the second; 37 gm. the third, and 0.2 gm. the fourth day, with a corresponding increase and decline in the proportion of acetone and bile pigments and normal conditions by the fourth day. Any individual who has had repeated attacks of arterial hypertension from vascular spasm is threatened with chronic hypertension in after years, as he shows by examples from his clinical experience.

Archiv f. Gynaekologie, Berlin.

Last indexed, page 838.

42 (LXXXI, No. 1, pp. 1-270, *F. A. Kehrer Festschrift.*) •Chemical Differences Between Human and Cow's Milk. (Chem. Unterschiede der Menschen- und Kuhmilch.) P. Biedert.
43 •Abdominal Cesarean Section in Comparison with Other Operations in Case of Contracted Pelvis. (Suprasymphysäre Entbindung.) F. Frank.
44 •Physiology and Dietetics of Third Stage of Labor. (Nachgeburtsperiode.) K. Heil.
45 Two Cases of Complication of Pregnancy with Wandering Spleen. (Schwangerschaft, Geburt und Wochenbett bei Wandermilz.) K. Heil.
46 •Importance of Icterus During Pregnancy for Mother and Child. (Bedeutung des Ikterus für Mutter und Kind.) E. Kehrer.
47 Physiologic and Pharmacologic Researches on the Isolated Uterus. (Untersuchungen an den inneren Genitalien.) Id.
48 Three Cases of Repeated Ectopic Pregnancy. (Wiederholte ektopische Schwangerschaften.) Kuppenheim.
49 Embryonal Deductions from Case of Uterus Bicornis and Bipartitus. (Uterus bicornis—subseptus—unicollis cum vagina subsepta.) J. Schottlaender.
50 Regulations in Prussia for Notification of Suspected Cases of Puerperal Fever. (Anzeigepflicht für Puerperalfieber.) O. Zillessen.

42. **Chemical Differences Between Human and Cow's Milk.**—Biedert reviews the progress made since he presented an inaugural thesis on this subject 40 years ago, the first ever devoted to this theme, he believes. It was prepared under Kehrer's supervision and, among other points, emphasized the necessity for chemical examination of infants' stools as a guide to treatment. This will differentiate at once the cases in which the digestion of fats is defective from those in which fat digestion proceeds normally. The former require abstention from fat, while the latter thrive on it.

43. **Abdominal Cesarean Section in Comparison with Other Operations for Contracted Pelvis.**—Frank reports 13 cases in which he performed this operation. All the patients had been manually examined with little regard to asepsis before entering the maternity. The results of the operation were excellent in every instance. He regards delivery by the abdominal route as affording more favorable conditions for the mother than delivery by the natural passages later if accompanied by much trauma. This is particularly evident in already infected cases, as he shows by examples. Abdominal delivery he thinks is free from danger, comparatively speaking, and he believes it is destined to prove the standard procedure in cases of contracted pelvis. He recognizes certain indications for the pelvis-enlarging operative measures, but adds that unforeseen mishaps are liable to occur, as he knows from personal experience. The degree of contraction of the pelvis is immaterial for Cesarean section, and febrile conditions are no contraindication. The operation is not able to cure infection in the uterus any more than other measures, but the child is saved, fatal septic peritonitis is avoided, and better conditions are afforded for combating the uterine infection than by any other technic.

44. **Physiology of Third Stage of Labor.**—In Heil's experience with a series of 120 parturients the placenta was ready to be expelled within thirty minutes after the birth of the child. He tabulates the findings according as the uterus was still contracted and like a ball, or as it had "flattened out." He concludes that it is not advisable to wait longer than half an hour for expression of the placenta in case of physiologic delivery and, in the interests of the rest-requiring parturient, it is not desirable. He examines in from 10 to 15 minutes after delivery to see whether the uterus is still contracted into a ball or has flattened out. In case of the latter finding, it can safely be assumed that the placenta can be readily expressed at the end of the half hour. He regards this flattening of the uterus as a sign of the descent of the detached placenta into the passage below, and fully as reliable an indication as the lengthening of the umbilical cord.

46. **Importance of Icterus During Pregnancy.**—E. Kehrer adds another to the 11 cases on record in which catarrhal icterus developed during the course of a pregnancy. His patient had long suffered from occasional slight icterus, and it assumed serious proportions at about the sixth month of her first pregnancy. The case is distinguished by the prolonged catarrhal icterus, the severity of its manifestations and accompanying cutaneous hemorrhages, pruritus and diarrhea, by the hemorrhagic diathesis observed in the child—observed likewise in Frank's case—and by the signs of mild osteomalacia and crural neuritis during the puerperium. The icterus vanished after delivery. In 2 other cases icterus coincided with uncontrollable vomiting, albuminuria and ptyalism in pregnant young women. The icterus of pregnant women is a serious condition on account of the cholemic hemorrhages, the loss of sleep from the itching, the emaciation from lack of appetite and from diarrhea, the liability to periods of excitement and to infection from scratching the itching skin, and also the tendency to osteomalacia and neuritis from the elements of the bile circulating so long in the blood. But the condition is still more dangerous for the child in some cases. Premature delivery occurred in 26 out of the 30 childbirths of 8 women with this icterus during pregnancy. In only 2 cases did delivery occur at term, and only 11 of the 31 children were born alive. In another group of 7 cases of catarrhal icterus, cholecystitis or cholangitis, only 4 of the children were born alive, and one was scarcely viable. Lomer collected from the literature 57 cases of catarrhal icterus plus acute yellow atrophy of the liver in pregnant women, and the intrauterine death of the fetus was noted in 45 cases. Kehrer regards it as strange that pediatrists writing of the hemorrhagic diathesis in children never mention whether or not the mothers had icterus during the pregnancy. In 28 cases the child of a mother with icterus and acute yellow atrophy of the liver presented no signs of icterus, while in 7 other cases congenital icterus was observed also in the child. Experimental research is further related which shows that the healthy placenta in laboratory animals does not allow the passage of the elements of the bile to the fetus, but responds with extreme hyperemia to the intoxication of the maternal organism. In treatment, the usual measures for icterus are advised if the condition does not last more than two or three weeks. If it persists longer than this or increases in intensity, it is much better to induce delivery and to rear the child in an incubator with a wet nurse than expose it to the almost certain danger of the hemorrhagic diathesis or icterus, as every day new amounts of the elements of the bile are being poured into it, poisoning its blood more and more. As the bile acids pass into the milk of women with icterus, it is best to substitute the milk of some other woman, even when the children are born apparently sound. Some substance that will neutralize the bile salts in the maternal blood may yet be discovered, but, he states, none is known as yet.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

51 (XXXIII, No. 7, pp. 249-288.) Treatment of Impotence. (Impotenz.) Fürbringer.
52 •Proteolytic Ferment Action as Differentiating Test for Suppurations. (Müller-Jochmann'sches Verfahren.) H. Kolaczek and E. Müller.
53 Hay Fever in 1906. (Erfahr. über das Heufieber.) A. Wolff-Eisner.
54 Great Value of Calomel as Antiseptic in Obstetrics. (Antiseptik in der Geburtshilfe.) Theopold.
55 Later Literature on Dilatation of Pregnant Uterus. (Künstliche Erweiterung des Uterus.) J. Klein.

56 Protecting Devices for Roentgen Room. (Schutzvorrichtungen.) F. Davidsohn.
57 How to Prescribe Protargol. (Rezeptur des Prot.) F. Goldmann.
58 Causes of Inhibition of Growth of Bacteria in Cultures. (Ursache der Wachstumshemmung.) C. Eijkman.
59 (No. 8, pp. 289-328.) Breast Nursing in Medical Practice. (Natürliche Säuglingsernährung.) H. Neumann. Postgraduate lecture.
60 *Epidemic Cerebrospinal Meningitis. (Genickstarre.) Knauth.
61 Inefficacy of Atoxyl in 2 Cases of African Relapsing Fever. (Wirkung des At. bei afrik. Rückfallfieber.) A. Breinl and A. Kinghorn.
62 *Metastases of Hypernephroma. (Hyperneph.-Met.) E. Hoffmann.
63 *Treatment of Hemorrhoids with Injections of Alcohol and Carbolic Acid After Temporary Wire Ligature. (Behandlung der Häm.) E. Franck.
64 Corset for Scoliosis with Pressure from Interposed Rubber Sponges. (Neues aktives Korsett.) Heermann.

52. **Differentiation of Pus of Various Origins by Proteolytic Ferment Action.**—This article describes further applications in the clinic of the Müller-Jochmann test for differentiation of pus by the proteolytic action of the ferments. The test is proving extremely reliable, the high temperature insuring the sterilization of the material and hastening the action of the ferment. A few drops of the pus to be examined are placed on the smooth surface of a Loeffler plate, that is, a Petri dish containing a rather thick layer of hardened beef or sheep serum. The plate is then placed for 24 hours in an incubator at 122 or 131 F. In case the pus contains a proteolytic ferment, each droplet digests the serum below it and the result is a little hollow at the point of contact. In case there is no proteolytic ferment present, the droplets merely dry on top of the serum with no tendency to hollow it out. This is what is always observed in case of pus from pure tuberculous processes. More than 100 tests with pus from carbuncles, acute gonorrhea, appendicitis and dozens of other affections, all induced by cocci or colon bacilli, invariably showed pronounced proteolytic digestion and consequent dimpling of the hard serum on the Loeffler plate. The lack of evidences of pronounced proteolytic ferment action is therefore a sign of a pure tuberculous process. The presence of the proteolytic action, however, does not exclude tuberculosis, as there may be mixed infection or the findings may be disturbed by preceding iodoform treatment, or by admixture of fresh blood.

60. **Epidemic Cerebrospinal Meningitis.**—Knauth reviews the experiences of the last thirty years in the Bavarian army in regard to epidemic cerebrospinal meningitis. He ascribes it to various causal agents in different epidemics, the pneumococcus cases being apparently the least serious, although commencing with an unusually stormy onset.

62. **Metastases of Hypernephroma.**—Hoffmann reports 2 cases in which a hypernephroma had developed in the kidney without attracting attention. The patients applied to a physician only when metastatic affections in the bones or elsewhere were observed. In the few similar cases on record the bone affection was assumed to be primary and was treated as such. In Israel's case two small lumps in the ribs were the first signs of trouble. Albrecht has also reported 4 cases out of 28 of hypernephroma in which a tumor in the bone was the first lesion noted. In these cases, the tumor was removed on the diagnosis of myelogenic sarcoma or tuberculous osteoperiostitis. With Hoffmann's first patient, pains in the legs and shoulders were the first symptoms, explained by small tumors discovered at the autopsy with numerous other metastases in the spleen, pleura and elsewhere. In the second case, a tumor at the entrance of the urethra, another in the vagina and a third on the inner surface of the thigh were found at the first examination, and the structure of the latter tumor was found to be similar to that of a hypernephroma. These experiences suggest the importance of bearing the possibility of hypernephroma in mind when consulted on account of a tumor, especially a tumor in the bone, by a patient past 50, even when no local or remote symptom points to a kidney tumor.

63. **Treatment of Hemorrhoids.**—Franck applies a polyp snare to the nodule, under local anesthesia, and slowly tightens the wire loop around the base of the nodule until it becomes extremely congested. Holding the loop tight in the left hand, he injects with the other hand from one-fifth to one-third of the contents of a Pravaz syringe filled with 50 per cent. carbolized alcohol. In from 5 to 10 minutes the nodule has hardened completely under the influence of the injection and the constricting loop is then loosened, and the next nodule attacked. He advocates this technic for all chronically inflamed or bleeding hemorrhoids when there is any hesitation about applying general anesthesia. Deep fissures are the only contraindication; they require cauterization. The use of the polyp snare renders the operation much simpler and easier than when a silk ligature is used.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 652.

65 (LXV, No. 1, pp. 1-128.) *Alimentary Intoxication in Infancy. (Al. Intox. im Säuglingsalter.) H. Finkelstein.
66 *Development of Children Who Had Convulsions During Infancy. (Entwicklung eklamptischer Säuglinge in der späteren Kindheit.) M. Thiemich and W. Birk. Concluded in No. 2.
67 Pathogenesis of Bone Changes in Infantile Scorbutus. (Knochenveränderungen bei Morbus Barlow.) G. Schmorl.
68 *Operative Treatment of Diphtherial Stenosis of the Larynx in Infants. (Op. Beh. der Diph.-Stenosen des Kehlkopfes bei Säuglingen.) W. Moltschanoff.
69 Pathology of Infantile Scorbutus. (Barlowsche Krankheit.) M. Flesch.
70 (No. 2, pp. 129-262.) *Tuberculosis of the Flat Bones of the Skull. (Tub. der platten Schädelknochen.) M. Reber.
71 *Obstipation in Consequence of Kinking of Intestine. (Obstipation infolge Darmabknickung.) R. Pfisterer.

65. **Alimentary Intoxication in Infants.**—Finkelstein relates his experiences in years of research on this subject, with special regard to the collapse, disturbances in consciousness, peculiar change in the rhythm of respiration, alimentary glycosuria, fever, diarrhea, albumin and tube casts in the urine, abrupt decline in weight and leucocytosis. The presence of these nine factors in the clinical picture is indispensable for the conception of what he entitles "alimentary" intoxication. The leucocytosis approaches but seldom reaches 30,000. The respiration is deeper and faster, and the gestures, instead of the "angular," rapid movements of health, become rare, languid and "rounded;" the corners of the mouth are drawn down; the arms and legs take unusual positions, sometimes stretched out, sometimes drawn up, relaxed or rigid. The lower blood pressure brings a livid tone to the complexion, with shadows around the eyes. It is important to see the child at rest to detect this intoxication in its incipiency; when the child is aroused these signs alter. The stools may be approximately normal even with these symptoms of serious intoxication. The sugar in the urine and the deep breathing differentiate this intoxication from the numerous infectious diseases which may be accompanied by some of the other signs. He suggests that these two signs may also prove useful for differentiating in adults brain affections from disturbances due to autointoxication, such as acetonemia and dyspeptic coma. In infants the appearance of the pathognomonic symptom-complex is an indication that a new specific process is going on in the organism. It is liable to be followed by specific, profound modifications of the metabolism. All the functions suffer, as he relates in detail. The intoxication is the expression of a regular reaction of the organism which always occurs when injury from any cause, such as an infectious affection or process or any deleterious influence, reaches a certain intensity. The intoxication is not the work of bacterial toxins, but of metabolic toxins; a sharp distinction should be made between them in this respect. Research is needed on the nature of the substances inducing the intoxication. The conditions are somewhat similar to those observed in uremia.

66. **Later Development of Children Who Have Had Convulsions During Infancy.**—Thiemich and Birk have traced the later history of 64 children known to have had convulsions in infancy. The only similar work which they have found in the literature was Bullard and Townsend's article in 1901, and this does not distinguish between the various kinds of convulsions, but lists all that are not true epilepsy. By "eclampsia infantum" Thiemich understands epileptiform convulsions, of the entire musculature, sometimes occurring in series, but lasting only a few minutes each time, with loss of consciousness, and, during the intervals, marked signs of "spasmophilia," such as tetany, laryngospasm, with the Trous-

seau or facial sign, or morbidly increased electric excitability. In the 64 cases reported, the onset of the eclampsia always followed metabolic disturbances. Only 2 of the children were even partially breast-fed. Dietetic measures were the main reliance in treatment, supplemented usually by phosphorus cod-liver oil. In 37 per cent. heredity was an unmistakable factor in the convulsions, and in 13 per cent. there was neuropathic heredity—a total of 54 per cent. of proven heredity. No instance of epilepsy was found in the parents or family of any of the children. Two-thirds of the children were found later to be below the average of intelligence or morals, and some of the others are only children. The writers add that the fact of being an only child, as is well known, affords a predisposition for nervous affections. An only child sometimes is helped at home with his studies, thus enabling him to be rated as normal at school—to the child's great disadvantage, as he succumbs sooner or later to the mental strain. Many an early maturing only child, who ranked high in his early school life, falls far below the average later, if he does not end as a "psychopath." The later development of the children with laryngospasm alone did not differ in any respect from that of the children with pronounced eclampsia. Only a very small percentage of the eclamptic infants developed into normal children.

68. **Operative Treatment of Diphtherial Stenosis of the Larynx in Infants.**—Moltschanow reviews the experience at Moscow with intubation in laryngeal stenosis from diphtheria. Out of a total of 193 intubated children, 21 were less than a year old. Ten of the infants recovered.

70. **Tuberculosis of the Flat Bones of the Skull.**—Reber reports 24 cases in children. None was under a year old, but 12 were between 1 and 2, and 11 between 2 and 10. In 134 cases recorded in the literature, the age is mentioned in 105, and 46 of the patients were between 10 and 20, 37 between 20 and 30, only 9 under the age of 2, while 5 were between 30 and 40, and 5 between 40 and 60. In his own experience with 24 cases, 11 of the patients were clinically cured in a comparatively short time; recent reports from 9 show that the cure was permanent, and also that concurrent tuberculous lesions elsewhere were also permanently cured at the same time. In 5 cases large depressions were left in the bones, but in one case regeneration of the bone was complete. The mild cases healed without local treatment. Others required puncture and injection of iodoform emulsion or scraping and resection far into sound tissue. Multiple tuberculous foci were found in all the cases that terminated fatally, and in 61 of the cases on record.

71. **Obstipation Due to Kinking of Intestine.**—Pfisterer was able to differentiate and to relieve this condition in a boy of 6. In an infant the presumptive diagnosis was confirmed by the postmortem findings. In the other case, the sigmoid flexure must have been unduly long, as whenever the child was allowed to go a day or so without a movement of the bowels, signs of complete occlusion rapidly developed, which yielded, however, to castor oil and copious rectal injections. As the intestine straightened out, the child experienced sudden sharp pain, after which the stools passed readily. The parents were instructed to supervise the child's intestinal functions and this put an end to further trouble. The anatomic conditions in early childhood favor this kinking of the intestine, and any disturbance in the digestive organs is liable to cause trouble from this source. The sigmoid flexure in children kinks easily, and the space in the pelvis, especially in boys, is contracted in comparison to the conditions in the adult. Rectal examination is important for differentiation, also the fact that large amounts of fluid can be introduced without its flowing out again. Fluid passes readily upward, but the valve-like closure of the kinked intestine prevents its escape. Pfisterer is convinced that a large proportion of the cases published as Hirschsprung's disease were, in reality, merely the result of this kinking of the intestine, generally at the sigmoid flexure, or the result of some primary or secondary anomaly in the mesentery. The assumption of a congenital deformity is sustained by the finding of other congenital malformations elsewhere.

Mitteilungen a. d. Grenzgebieten der Med. u. Chir., Jena.

Last indexed, page 1069.

72 (XVII, Nos. 1-2, pp. 1-248.) *Etiology of Appendicitis. R. Kretz.
73 *Gas in the Urine. (Pneumaturie.) C. Adrian and A. Hamm.
74 *Experimental Study of Functions of Kidney Parenchyma Remaining After Extensive Resection. (Nierenreduktion und Funktion des restierenden Parenchyms.) H. von Haberer.
75 Pathologic Anatomy of Appendicitis. (Wurmfortsatzerkrankungen.) P. Schrumpf.
76 Case of Unilateral Congenital Defect in the Pectoral Muscle with Absence of Corresponding Mamma. (Pectoralisdefekt bei Amastie.) F. Loening.
77 *Diagnosis of Occlusion of Artery in Gangrene of the Foot. (Arterienverschluss bei Gangraena pedis.) L. Moszkowicz.
78 Pathology of Circulation in Thyroid Gland. (Schilddrüsenzirkulation.) T. v. Verebely.
79 Inflammation of the Cecum and Intestinal Catarrh. (Blinddarmentzündung und Darmkatarrh.) E. Siegel.

72. **Tonsils in Etiology of Appendicitis.**—Kretz presents arguments to sustain the assumption that an acute angina may lead to bacteriemia and the bacteriemia to phlegmonous appendicitis. During the last 5 years appendicitis was the cause of death in 53 out of the 3,579 autopsies at the Vienna Franz-Josef Hospital. In only 14 cases was the autopsy complete, but in each of these there were evidences of recent tonsillitis. His experience in the clinic also favors the assumption of a connection between tonsillitis and appendicitis. The trouble is almost invariably the work of streptococci. From their primary invasion of the tonsils, with resulting bacteriemia, may result appendicitis, osteomyelitis, endocarditis, pleurisy, meningitis or myositis. Physicians in general fail to realize the connection between these affections, Kretz remarks, but they belong in a single group not only because they are the work of a certain pyogenic micro-organism, but because they are connected epidemiologically by the common link "angina."

73. **Gas in the Urine.**—Adrian and Hamm devote this communication to the study of spontaneous gas formation in the bladder exclusively the work of gas-producing bacteria. Three such cases have been published and they have had 4 similar ones under observation for some time. The patients were 4 men and 3 women, between 23 and 66. Two of the women were pregnant. There was no glycosuria in any instance. Cystitis was present in every case. In 4 cases the colon bacillus was found in pure cultures, in 3 the *Bacterium lactis aërogenes*, once associated with cocci. The prognosis is dubious, especially for elderly persons. Experience with 2 of the cases suggests the probability of some serious affection of adjacent organs (cancer), favoring the development of the pneumaturia. The production of gas is probably due to bacterial decomposition of the albumin in the cystitic urine. Treatment can be only symptomatic, they say, as no efficient measures against bacterial pneumaturia are known.

74. **Behavior of Remainder of Kidney After Resection.**—Haberer reports experiments on 3 goats and 38 dogs in which resections of the kidneys were made, as extensive as possible and at as brief intervals as possible, with implantation of fresh kidney tissue when more of the kidney had been resected than was compatible with life. His research is described in detail with illustrations. He was surprised to find that no less than 9 of the supposedly healthy dogs presented pathologic changes in the kidneys at the first operation. Among other facts learned is that some animals are able to survive two resecting operations on the remaining kidney after nephrectomy, even when all 3 operations are performed within from 25 to 34 days. The death rate, however, is very high for this series of experiments. At the same time they show that it is possible for dogs to survive extirpation of one kidney and reduction of the size of the other kidney to two-thirds its size, all within week, or reduction to one-half its size by two operations following the nephrectomy within a month. The experiments further demonstrate that mild bilateral pathologic changes are liable to retrogress completely in the remaining kidney after a nephrectomy. Whether or not resection of the remaining kidney will be tolerated can not be foretold, even with cryoscopy and the phloridzin test. The latter proved an excellent index of the functional capacity of the renal parenchyma present. Whether general anesthesia

can affect the findings of the phloridzin test is still undecided. Repetition of the phloridzin test within brief intervals does not seem to influence the findings, but this test never reveals an anatomic lesion until it has induced functional disturbance. It is even possible that causes outside the kidney may entail functional disturbances revealed by the phloridzin test. It was astonishing in the experiments related to note the almost complete absence of even transient general disturbances from removal of one kidney.

77. Diagnosis and Treatment of Occlusion of Arteries in Gangrene of the Foot.—The application of a tourniquet for 5 minutes with the consecutive active hyperemia as the blood rushes back into the parts has proved a valuable means of determining the conditions of the blood vessels in the region. With sound blood vessels the region becomes red and warm, while with occluded vessels the pallor persists or the skin only slowly returns to normal tint. Moszkowicz's experiments on the cadaver and in the clinic demonstrated that the occlusion of the artery was always localized by the stoppage of the return flow of blood at this point or just above. Further clinical experience is necessary to determine whether amputation can be done at this point or whether it is wiser to leave more space and to amputate a few inches above the point where the active hyperemia is arrested. Another important question yet to be decided is whether or not it might be wiser to take the flap on the side where the hyperemia extends farther downward. He first raises the leg to expel the blood, then applies energetic constriction with an elastic band, as high as possible on the limb, and leaves the tourniquet in place for five minutes. On removal of the band the circulation is rapidly restored throughout the limb, even in case of arteriosclerosis, if the blood vessels are permeable. When the circulation is seen to be sufficient all through the leg except at the toes, expectant treatment is indicated, allowing the toes to drop off as in case of gangrene from freezing, or the whole or part of the foot can be amputated. But if the circulation is seen to be arrested above, the leg should be amputated without delay, above the point where the active hyperemia is arrested. If amputation is refused, by repeating the test the course of the case can be supervised and the development of occlusion from thrombi higher up can be determined. The patients can see for themselves the results of the test, and it much simplifies matters. Even with mere narrowing of the arteries, as in case of intermittent claudication, the active hyperemia test gives very instructive findings. It will differentiate the true cause in many conditions at present erroneously attributed to joint affections, flat foot, varices or hysteria. In conclusion, Moszkowicz suggests that possibly by repetition of t 's procedure of induced active hyperemia, the lumen of the vessels might become enlarged or the development of collateral circulation be promoted. Other measures to induce active hyperemia, including cupping apparatus, might also be tried, although great caution is necessary, especially with superheated air.

Books Received

VIRGINIA CONFERENCE OF CHARITIES AND CORRECTION. Fifth Annual Session. Paper. Pp. 115. Petersburg, Va., 1906.

KAPIOLANI GIRLS' HOME, Honolulu, T. H., and Proposed Boys' Home, Waimea, Hawaii. Paper. Pp. 7. Honolulu: Gazette Co.

INFORME MENSUAL SANITARIO Y DEMOGRAFIO de la Republica de Cuba. By Hon. C. E. Magoon and Dr. Carlos J. Finlay. December, 1906. Paper. Pp. 51. Havana, 1907.

REPORT of the President of the Board of Health of the Territory of Hawaii for the Six months Ending Dec. 31, 1906. Paper. Pp. 117. Honolulu: Hawaiian Gazette Co., 1907.

MOLOKAI SETTLEMENT. Illustrated. Territory of Hawaii Villages Kalaupapa and Kalawao. Issued by the Board of Health of the Territory of Hawaii. Paper. Pp. 50. Honolulu: Hawaiian Gazette Co., 1907.

REPORT of the Board of Managers of the National Home for Disabled Volunteer Soldiers for the Fiscal Year Ending June 30, 1906. Half Leather. Pp. 538. Washington: Government Printing Office, 1906.

EPILEPSY. A Study of the Idiopathic Disease. By William Aldren Turner, M.D., Edin., Fellow of the Royal College of Physicians of London. Cloth. Pp. 272. Price, $3.25 net. London and New York: Macmillan & Co., 1907.

AUSCULTATION AND PERCUSSION, Together with the Other Physical Examinations of the Chest. By Samuel Gee, M.D., Fellow of the Royal College of Physicians. Fifth Edition. Cloth. Pp. 325. London: Smith, Elder & Co., 1906.

HINTS ON THE MANAGEMENT OF THE COMMONER INFECTIONS. By R. W. Marsden, M.D., M.R.C.P., D.P.H., Honorary Physician to the Ancoats Hospital, Manchester. Cloth. Pp. 128. Price, $1.50. New York: E. B. Treat & Co., 1907.

MUSCLES OF THE EYE. By Lucien Howe, M.A., M.D., Professor of Ophthalmology, University of Buffalo. In Two Volumes. Vol I. Illustrated. Cloth. Pp. 455. Price, $4.25 net. New York and London: G. P. Putnam's Sons, 1907.

LETTERS ON PSYCHOTHERAPEUTICS. By Professor H. Oppenheim of Berlin University. Translated by Alexander Bruce, M.D., F.R.C.P.E., F.R.S.E. Paper. Pp. 60. Edinburgh: Otto Schulze & Co., New York: G. E. Stechert & Co., 1907.

SOME POINTS IN THE SURGERY OF THE BRAIN AND ITS MEMBRANES. By Charles A. Ballance, M.V.O., M.S., F.R.C.S., Royal Prussian Order of the Crown. With Illustrations. Cloth. Pp. 405. Price, $5.00. London and New York: Macmillan & Co., 1907.

RACE CULTURE; OR, RACE SUICIDE? A Plea for the Unborn. By Robert Reid Rantoul, Doctor of Medicine; Member of the Royal College of Surgeons, England. Cloth. Pp. 182. Price 7s. 6d. net ($1.87). New York: The Walter Scott Publishing Co., 1906.

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TEXT-BOOK OF EMBRYOLOGY. For Students of Medicine. By John Clement Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. With 212 Illustrations. Third Edition, Thoroughly Revised. Cloth. Pp. 432. Price, $3.00 net. Philadelphia and London, W. B. Saunders Co., 1907.

TUBERCULOSIS AS A DISEASE OF THE MASSES AND HOW TO COMBAT IT. Prize Essay. By S. A. Knopf, M.D., Director in the National Association for the Study and Prevention of Tuberculosis. Fourth Issue Revised and Illustrated. Paper. Pp. 104. New York City: Fred P. Flori, and Charities and The Commons, 1907.

THE NURSLING. The Feeding and Hygiene of Premature and Full-term Infants. By Pierre Budin, Professor of Obstetrics, University of Paris. Authorized Translation by William J. Maloney, M.D., Ch.B., with an Introduction by Sir Alexander R. Simpson, M.D., LL.D., D.Sc. One Hundred and Eleven Diagrams in Color. Cloth. Pp. 199. Price, $6.00. London: The Caxton Publishing Co.; New York: Imperial Publishing Co., 1907.

NEW PATENTS.

Recent patents of interest to physicians:

844855. Formaldehyd generator. Robert W. Dodge, Kansas City, Mo.
844335. Syringe. Joseph H. Dodson, Chicago.
844715. Evaporator. Andrew A. Dunham, Adams, N. Y.
844860. Purifying pyroligneous acid. James R. Garroway, Glasgow, Scotland.
844449. Inhaler. Maurice Green, New York.
844450. Rectal dilator. Charles R. Harris, Los Angeles.
844798. Surgical appliance. Louis B. Hawley, Rochester, N. Y.
844362. Invalid-bed. Samuel C. Kagarice, Sioux Falls, S. D.
844952. Eye-protector. Elie Mirovitch, Paris, France.
844544. Hypodermic syringe. Gustav R. Schimmel, Detroit.
844478. Catheter-users' mechanical assistant. James F. Spalding, Kansas City, Mo.
844632. Hospital tent. Henry B. Thompson, Philadelphia.
845696. Eye guard or shield. Harvey S. Cover, South Bend, Ind.
845400. Dropping bottle. Robert H. Ferguson, East Orange, N. J.
845733. Massage apparatus. George W. Fitz, Boston.
845455. Apparatus for removing hairs. Manley G. Fowler, Rochester, N. Y.
845303. Syringe. Thomas J. Kernan, Akron, Ohio.
845099. Ophthalmoscope. Emanuel N. Klein, Cincinnati.
845249. Syringe nozzle. Norval T. Morris, Marietta, Ohio.
845587. Surgical instrument. Charles W. Sheldon, Clearfield, Iowa.
845383. Ear-massage apparatus. Kelley M. Turner, New York, and N. W. Johnston, Chappaqua, N. Y.
845208. Sterilizer. Georg Van Eyck, Oeflingen, Germany.
845790. Treating proteids. Mone R. Isaacs, Philadelphia.
846412. Massage apparatus. Johannes C. Johansen, Copenhagen, Denmark.
846232. Reservoir bleeder. John E. Mourne and H. J. Tinsley, Chillicothe, Ohio.
846142. Eye-cleansing device. Wm. Reeves, New Haven, Conn.
846895. Medicinal extract. Ludwig Bauer, Niederlossnitz, Germany.
847232. Apparatus for cooling, moistening and purifying the air of rooms. Dora Buhlmann, Kaiserslautern, Germany.
847239. Vibratory massage instrument. Benjamin T. Castleman, St. Louis.
846553. Automatic tilting vial case. Wilson W. Cummins, Lidgerwood, N. D.
846834. Combined bed-pan and douche. Naomi Egan, Danville, Cal.
847133. Trepan. Ramon Velasco, Gaudalajara, Mexico.
847218. Drop-regulating bottle. Alfred Wilkin, New York.
847542. Hinge for surgical and other instruments. George T. Barber, Philadelphia.
847311. Metatarsophalangeal protector. Joseph Bronnenkant, Racine, Wis.
848728. X-ray apparatus. Eugene W. Caldwell, New York.
847550. Bed-rest for invalids. George G. Campion, Manchester, England.
847758. Surgical appliance. Clara C. Frye, Tampa, Fla.
847942. Medicine spoon. George C. Hohein, Norfolk, Va.
847775. Truss-pad. Wm. H. Horn, Jr., Philadelphia.
847779. Surpensory. John R. Jarrett, Mishawaka, Ind.
847360. Massaging implement. Frederick J. Osius, Racine, Wis.
847619. Invalid-bed. Aiken C. Taylor, Charleston, S. C.